

IN THE UNITED STATES DISTRICT COURT  
FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA  
HUNTINGTON DIVISION

-----  
Christopher Fain, individually and on behalf of all  
others similarly situated, et al.,

Plaintiffs,

vs.

CIVIL ACTION NO. 3:20-cv-00740

William Crouch, et al.,

Defendants.

-----  
REMOTE VIDEOTAPED DEPOSITION OF DR. STEPHEN LEVINE

DATE: April 27, 2022

TIME: 8:00 a.m. CST

PLACE: Veritext Virtual Videoconference

REPORTED BY: KELLEY E. ZILLES, RPR (Via Videoconference)

JOB NUMBER: 5176996

Page 2	Page 4
<p>1 APPEARANCES</p> <p>2</p> <p>3 On Behalf of the Plaintiffs (Via Videoconference):</p> <p>4 TARA L. BORELLI, ESQ.</p> <p>5 Lambda Legal Defense and Education Fund, Inc.</p> <p>6 158 West Ponce De Leon Ave., Suite 105</p> <p>7 Decatur, Georgia 30030</p> <p>8 470.225.5341</p> <p>9 tborelli@lambdalegal.org</p> <p>10</p> <p>11 AVATARA SMITH-CARRINGTON, ESQ.</p> <p>12 NICHOLAS GUILLORY, ESQ.</p> <p>13 Lambda Legal Defense and Education Fund, Inc.</p> <p>14 3500 Oak Lawn Avenue, Suite 500</p> <p>15 Dallas, Texas 75219</p> <p>16 214.219.8585</p> <p>17 asmithcarrington@lambdalegal.org</p> <p>18 nguillory@lambdalegal.org</p> <p>19</p> <p>20 CARL CHARLES, ESQ.</p> <p>21 Lambda Legal Defense and Education Fund, Inc.</p> <p>22 158 West Ponce De Leon Avenue, Suite 105</p> <p>23 Atlanta, Georgia 30030</p> <p>24 212.809.8585</p> <p>25 ccharles@lambdalegal.org</p>	<p>1 INDEX</p> <p>2</p> <p>3</p> <p>4 WITNESS: DR. STEPHEN LEVINE PAGE</p> <p>5</p> <p>6</p> <p>7</p> <p>8 EXAMINATION BY MR. CHARLES..... 10</p> <p>9 AFTERNOON SESSION..... 111</p> <p>10 EXAMINATION BY MR. DAVID..... 229</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15 OBJECTIONS... 14, 71, 73, 85, 86, 91, 92, 93, 94, 119,</p> <p>16 133, 134, 163, 231, 232, 233, 235, 238, 239, 240</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21 EXHIBITS MARKED AND REFERRED TO:</p> <p>22</p> <p>23 Exhibit 1 Expert Disclosure Report of Dr.</p> <p>24 Stephen B. Levine, M.D..... 18</p> <p>25</p>
Page 3	Page 5
<p>1 WALT AUVIL, ESQ.</p> <p>2 The Employment Law Center, PLLC</p> <p>3 1208 Market Street</p> <p>4 Parkersburg, West Virginia 26101</p> <p>5 304.485.3058</p> <p>6 auvil@theemploymentlawcenter.com</p> <p>7</p> <p>8 On Behalf of Defendants William Crouch; Cynthia Beane;</p> <p>9 and West Virginia Department of Health and Human</p> <p>10 Resources, Bureau for Medical Services (Via</p> <p>11 Videoconference):</p> <p>12 KIMBERLY M. BANDY, ESQ.</p> <p>13 LOU ANN S. CYRUS, ESQ.</p> <p>14 CALEB B. DAVID, ESQ.</p> <p>15 Shuman McCuskey Slicer, PLLC</p> <p>16 1411 Virginia Street East, Suite 200</p> <p>17 Charleston, West Virginia 25301</p> <p>18 304.345.1400</p> <p>19 kbandy@shumanlaw.com</p> <p>20 lcyrus@shumanlaw.com</p> <p>21 cdavid@shumanlaw.com</p> <p>22</p> <p>23 ALSO PRESENT: Kraig Hildahl, Videographer</p> <p>24 (Via Videoconference)</p> <p>25</p>	<p>1 Exhibit 2 Curriculum Vitae..... 20</p> <p>2</p> <p>3 Exhibit 3 BPJ vs. West Virginia State Board of</p> <p>4 Education, et al Deposition of</p> <p>5 Stephen Levine, Volume I, 3/30/22..... 53</p> <p>6</p> <p>7 Exhibit 4 Special Programs..... 64</p> <p>8</p> <p>9 Exhibit 5 Kadel vs. Folwell, et al Deposition of</p> <p>10 Stephen B. Levine, M.D., 9/10/21..... 76</p> <p>11</p> <p>12 Exhibit 6 Case Western Health Care Coverage for</p> <p>13 Staff and Students..... 88</p> <p>14</p> <p>15 Exhibit 7 Considering Sex as a Biological Variable</p> <p>16 in Basic and Clinical Studies: An</p> <p>17 Endocrine Society Scientific Statement. 97</p> <p>18</p> <p>19 Exhibit 8 Reflections on the Clinician's Role with</p> <p>20 Individuals Who Self-identify as</p> <p>21 Transgender Paper..... 100</p> <p>22</p> <p>23 Exhibit 9 One Year Since Finland Broke with WPATH</p> <p>24 Standards of Care, 7/2/21..... 105</p> <p>25</p>

Page 6	Page 8
1 Exhibit 10 International Clinical Practice Guidelines	1 Exhibit 25 Gender Dysphoria in Childhood Article.. 227
2 for Gender Minority/Trans People:	2
3 Systematic Review and Quality Assessment	3
4 Article..... 113	4 (Original exhibits attached to original transcript.
5	5 Copies attached to transcript copies.)
6 Exhibit 11 Dear Colleagues, Clients and Friends,	6
7 by Marci Bowers, M.D..... 125	7
8	8
9 Exhibit 12 Gender Dysphoria and Gender	9
10 Reassignment Surgery Article..... 131	10
11	11
12 Exhibit 13 Canadian Gender Report..... 140	12
13	13
14 Exhibit 14 Detransition-Related Needs and Support: A	14
15 Cross-Sectional Online Survey Article.. 155	15
16	16
17 Exhibit 15 Individuals Treated for Gender Dysphoria	17
18 with Medical and/or Surgical Transition	18
19 Who Subsequently Detransitioned: A	19
20 Survey of 100 Detransitioners..... 161	20
21	21
22 Exhibit 16 Endocrine Treatment of	22
23 Gender-Dysphoric/Gender-Incongruent	23
24 Persons: An Endocrine Society Clinical	24
25 Practice Guideline..... 163	25
Page 7	Page 9
1 Exhibit 17 Pediatric Obesity—Assessment, Treatment,	1 VIDEO TECHNICIAN: We're going on the
2 and Prevention: An Endocrine Society	2 record at 8:59 a.m. Eastern time on April 27, 2022.
3 Clinical Practice Guideline..... 177	3 This is media unit No. 1 of the video recorded
4	4 deposition of Dr. Stephen Levine, taken in the matter of
5 Exhibit 18 26 Swedish Review Unavailable..... 189	5 Christopher Fain, et al. versus William Crouch, et al.,
6	6 from the U.S. District Court for the Southern District
7 Exhibit 19 Finnish Article..... 189	7 of West Virginia, Case No. 3:20-CV-00740.
8	8 This deposition is being held remotely. My name
9 Exhibit 20 Gender-Affirming Hormone in Children	9 is Kraig Hildahl, I'm with Veritext Legal Solutions, I'm
10 and Adolescents Blog Screen Shot..... 193	10 the videographer, the court reporter today is Kelley
11	11 Zilles, also with Veritext.
12 Exhibit 21 Gender-Affirming Hormone in Children	12 Will counsel please identify themselves for the
13 and Adolescents Article, 2/25/19..... 194	13 record.
14	14 MR. CHARLES: This is Carl Charles with
15 Exhibit 22 Fain vs. Crouch, et al Deposition	15 Lambda Legal for the plaintiffs.
16 Transcript of Cynthia Beane, 3/29/22... 217	16 MS. BORELLI: Tara Borelli from Lambda
17	17 Legal on behalf of the plaintiffs.
18 Exhibit 23 Transgender and Gender Diverse Children	18 ATTORNEY SMITH: This is Avatara
19 and Adolescents: Fact-Checking of AAP	19 Smith-Carrington with Lambda Legal on behalf of the
20 Policy..... 221	20 plaintiffs.
21	21 MR. DAVID: This is Caleb David with Shuman
22 Exhibit 24 A Follow-Up Study of Boys with Gender	22 McCuskey Slicer on behalf of the defendants.
23 Identity Disorder Article..... 224	23 MS. CYRUS: Lou Ann Cyrus with Shuman
24	24 McCuskey Slicer, also on behalf of the plaintiffs.
25	25 MS. BANDY: Kimberly Bandy with Shuman

<p style="text-align: right;">Page 10</p> <p>1 McCuskey Slicer on behalf of the defendants.</p> <p>2 VIDEO TECHNICIAN: Will the court reporter</p> <p>3 please swear in the witness and then we can proceed.</p> <p>4 DR. STEPHEN LEVINE,</p> <p>5 duly sworn, was examined and testified as follows:</p> <p>6 COURT REPORTER: Go ahead.</p> <p>7 MR. CHARLES: Thanks, Kelley.</p> <p>8 EXAMINATION</p> <p>9 BY MR. CHARLES:</p> <p>10 Q. Good morning, Dr. Levine. So before we get</p> <p>11 started this morning I just want to go over some ground</p> <p>12 rules. I know you've been deposed many times, so I will</p> <p>13 try to keep this brief. So first of all, do you</p> <p>14 understand you are under oath today?</p> <p>15 A. I do.</p> <p>16 Q. Okay. And that requires you to testify</p> <p>17 truthfully?</p> <p>18 A. Yes.</p> <p>19 Q. You sat for deposition before many times, right,</p> <p>20 Dr. Levine?</p> <p>21 A. Yes.</p> <p>22 Q. Okay. Since the court reporter needs to</p> <p>23 transcribe everything that you and I say today, please</p> <p>24 do endeavor to answer my questions with a verbal</p> <p>25 response and not a, not a head nod or a gesture or a</p>	<p style="text-align: right;">Page 12</p> <p>1 but.</p> <p>2 Q. So there, there isn't any that you can think of?</p> <p>3 A. Correct.</p> <p>4 Q. Okay. And just to, just to confirm again, Dr.</p> <p>5 Levine, that the oath you've taken as we started today,</p> <p>6 was that, was the same that you would take in a court of</p> <p>7 law, so you understand that the testimony you're</p> <p>8 providing today is under penalty of perjury?</p> <p>9 A. I do.</p> <p>10 Q. Okay. So before we get too far along today, I</p> <p>11 just want to note that we're going to be talking quite a</p> <p>12 bit about various types of medical care and I want to</p> <p>13 note the use of some terminology and just confirm that</p> <p>14 we can come to an understanding of what is meant by</p> <p>15 certain terms, which is not to suggest that you</p> <p>16 necessarily agree with that term in and of itself, but</p> <p>17 for the purposes of today I want to make sure we're on</p> <p>18 the same page. Is that amenable to you?</p> <p>19 A. I don't exactly know what you're referring to at</p> <p>20 this point, but in general principle, yes.</p> <p>21 Q. Okay. I'll be more specific. So if I refer to</p> <p>22 gender affirming care or gender confirming care, will</p> <p>23 you know that I'm referring to medical care, medical</p> <p>24 interventions commonly provided to transgender people</p> <p>25 for the treatment of gender dysphoria?</p>
<p style="text-align: right;">Page 11</p> <p>1 mm-hmm, but a yes or a no as much as possible, okay?</p> <p>2 A. Okay.</p> <p>3 Q. Please try to wait to respond to my question</p> <p>4 until after I've completed the question, in turn I will</p> <p>5 also try to wait to start a new question until after you</p> <p>6 have finished speaking, okay?</p> <p>7 A. Okay.</p> <p>8 Q. If you need a break, please let me know, but if</p> <p>9 there is a question pending for you to answer I will ask</p> <p>10 that you respond to that question before we take a</p> <p>11 break. Does that make sense?</p> <p>12 A. It does.</p> <p>13 Q. Okay. If I ask a question that is not clear or</p> <p>14 that you don't understand, please let me know and I will</p> <p>15 repeat it or rephrase it, okay?</p> <p>16 A. Okay.</p> <p>17 Q. And, Dr. Levine, is there anything that would</p> <p>18 prevent you from giving full, complete and truthful</p> <p>19 testimony today?</p> <p>20 A. Not that I can think of.</p> <p>21 Q. Any medication you've taken that, that might</p> <p>22 prevent you from doing so?</p> <p>23 A. No.</p> <p>24 Q. Okay.</p> <p>25 A. I can't imagine what medicine that would be,</p>	<p style="text-align: right;">Page 13</p> <p>1 A. Is that all that refers to or is that just some</p> <p>2 of the things that it refers to?</p> <p>3 Q. That's, that's how I'll be using it today. And,</p> <p>4 and we can get into the nuance of, of that later, but</p> <p>5 when I say gender affirming care I will be talking about</p> <p>6 medical care, medical interventions.</p> <p>7 A. So you'll be talking about hormone treatment.</p> <p>8 Q. Hormonal interventions, potentially puberty</p> <p>9 blockers, also surgical interventions.</p> <p>10 A. Okay, I will try to remember that's what you</p> <p>11 mean.</p> <p>12 Q. Okay. And I will, I will endeavor to be more</p> <p>13 specific if the, if the situation calls for it. So then</p> <p>14 similarly, if I refer to gender affirming surgery in</p> <p>15 this deposition, I will be referring to what people used</p> <p>16 to call sex reassignment surgery, does that make sense?</p> <p>17 A. It does.</p> <p>18 Q. Okay. Have you been retained as an expert</p> <p>19 witness by defendants in this case?</p> <p>20 A. Yes.</p> <p>21 Q. And you understand, Dr. Levine, that your report</p> <p>22 was submitted to the court by these defendants as expert</p> <p>23 testimony to advance their position against the</p> <p>24 plaintiffs?</p> <p>25 A. I'm not sure I understood what happened to my</p>



<p style="text-align: right;">Page 14</p> <p>1 report, but I, in general I think I agree that I</p> <p>2 understood something like you just said, yes.</p> <p>3 Q. Okay. So the defendants in this case are using</p> <p>4 your opinion in support of their position that they do</p> <p>5 not need to cover gender affirming medical care in the</p> <p>6 West Virginia Medicaid Program, so I'm just asking if</p> <p>7 you're aware that your testimony has been submitted for</p> <p>8 that purpose?</p> <p>9 A. It is not my exact understanding because it's my</p> <p>10 understanding that it's, that hormone treatment or what</p> <p>11 you would call gender affirming hormone treatment is</p> <p>12 being covered by West Virginia Medicaid, it is the</p> <p>13 surgery that is not being covered.</p> <p>14 Q. Yes, that's right. That's what I said, that,</p> <p>15 that it's a ban on surgical interventions and your</p> <p>16 testimony has been submitted. So you're agreeing with</p> <p>17 what I said?</p> <p>18 MR. DAVID: Object to the form of the</p> <p>19 question. But you can answer.</p> <p>20 A. It's my understanding that your original</p> <p>21 question stated gender affirming care and you didn't say</p> <p>22 only surgery and I was just trying to point out that</p> <p>23 gender affirming care in your language is a broad term</p> <p>24 that includes hormone treatment. And so I, it was my</p> <p>25 understanding that, that the concern here is on genital</p>	<p style="text-align: right;">Page 16</p> <p>1 A. I think shortly after they were submitted.</p> <p>2 Q. Okay. And can you just tell me, please, what</p> <p>3 articles you read to prepare for the deposition today</p> <p>4 that you recall?</p> <p>5 A. I read Hayes' report, I read -- well, actually I</p> <p>6 read an article that was recently published, but not</p> <p>7 necessarily, it wasn't referenced in this report.</p> <p>8 Q. What was that article, Dr. Levine?</p> <p>9 A. It was the article published recently about,</p> <p>10 from the University of, from University of Washington -</p> <p>11 Seattle suggesting that puberty blocking hormones and</p> <p>12 cross sex hormones decrease the amount of anxiety, they</p> <p>13 decrease the amount of depression that the treated kids</p> <p>14 had, and I had previously read the scathing taking apart</p> <p>15 of this article and the shenanigans involved with</p> <p>16 limitations of the article. So I, I reread the original</p> <p>17 article last night.</p> <p>18 Q. Do you recall the title of that article or the</p> <p>19 authors?</p> <p>20 A. I think it was, it was multiple authors. I</p> <p>21 think it was Tartof or a name very much like Tartof.</p> <p>22 Q. Okay. And then the criticism you said you read</p> <p>23 also, do you remember the authors or the title of that?</p> <p>24 A. Singal, S-I-N-G-A-L.</p> <p>25 Q. Oh, okay. Thank you. Did you, without telling</p>
<p style="text-align: right;">Page 15</p> <p>1 surgery, breast removal, perhaps facial feminization</p> <p>2 surgery, et cetera, but not hormone therapy.</p> <p>3 Q. Understood. And what were you specifically</p> <p>4 asked to do, Dr. Levine, related to this case? I'm</p> <p>5 sorry, what expert opinions were you asked to provide</p> <p>6 specifically related to this case?</p> <p>7 A. I was asked to represent the state of science in</p> <p>8 this field.</p> <p>9 Q. Okay. And what did you do to prepare for your</p> <p>10 deposition today, Dr. Levine?</p> <p>11 A. I reread my, I reread my expert opinion report</p> <p>12 on several occasions in the last few days.</p> <p>13 Q. Did you, did you review any, anything else other</p> <p>14 than your report?</p> <p>15 A. Well, I'm constantly reading certain articles</p> <p>16 that I, I reread some of the articles in, that I</p> <p>17 referenced in the report.</p> <p>18 Q. Okay. Did you read any of the rebuttal reports</p> <p>19 that were submitted in this case in response to your</p> <p>20 expert report?</p> <p>21 A. I, I read, I mean, I have read the rebuttal</p> <p>22 reports, I didn't read all the rebuttal reports in</p> <p>23 preparation for today.</p> <p>24 Q. Okay. But you have read them prior to today at</p> <p>25 some point?</p>	<p style="text-align: right;">Page 17</p> <p>1 me the substance of your conversations, did you speak</p> <p>2 with any of the attorneys for the defendants in</p> <p>3 preparation for today?</p> <p>4 A. Oh, yes, I did. Last evening I had a 20-minute</p> <p>5 conversation with Mr. David, and the week before I had a</p> <p>6 several hour meeting with Mr. David, it was Wednesday</p> <p>7 evening one week ago with Mr. David and another lawyer</p> <p>8 Kim, I'm sorry, I can't, I think it's Grandell, but I'm</p> <p>9 not sure of her last name.</p> <p>10 Q. Was it Kim Bandy, by any chance?</p> <p>11 A. Bandy?</p> <p>12 Q. Bandy, B as in boy?</p> <p>13 A. Yeah, Bandy, Bandy, yes.</p> <p>14 Q. Did you speak with anyone other than the</p> <p>15 attorneys for defendants in preparation for this</p> <p>16 deposition?</p> <p>17 A. No.</p> <p>18 Q. Okay. Dr. Levine, do you have the Exhibit Share</p> <p>19 program available on one of your screens, or a screen?</p> <p>20 A. Not that I'm aware of.</p> <p>21 Q. So that would be the program that we're going to</p> <p>22 use to introduce documents and have you review</p> <p>23 documents.</p> <p>24 A. Well, then you're going to have to, I'm just in</p> <p>25 the Zoom call, I just opened up one program.</p>

<p style="text-align: right;">Page 18</p> <p>1 Q. Okay.</p> <p>2 A. Perhaps I need to go back and open up --</p> <p>3 Q. No, that's okay, hold on just one moment.</p> <p>4 MR. CHARLES: Kelley, can we go off the</p> <p>5 record briefly.</p> <p>6 VIDEO TECHNICIAN: We're going off the</p> <p>7 record at 9:14 a.m.</p> <p>8 (A break was taken at 8:14 a.m.)</p> <p>9 (Exhibit 1 marked for identification.)</p> <p>10 VIDEO TECHNICIAN: We're going back on the</p> <p>11 record at 9:33 a.m.</p> <p>12 BY MR. CHARLES:</p> <p>13 Q. Okay. Dr. Levine, so you should be looking at</p> <p>14 what I have marked as SL01, do you see that?</p> <p>15 A. No, my, I'm only on the exhibit screen now. I</p> <p>16 see me, I don't see you, I don't know if --</p> <p>17 Q. Okay. So --</p> <p>18 A. All I see is Exhibit 1 Fain Levine.</p> <p>19 Q. Okay.</p> <p>20 MR. CHARLES: Kelley, let's go back off the</p> <p>21 record.</p> <p>22 VIDEO TECHNICIAN: We're going off the</p> <p>23 record at 9:33 a.m.</p> <p>24 (A break was taken at 8:33 a.m.)</p> <p>25 VIDEO TECHNICIAN: We're going back on the</p>	<p style="text-align: right;">Page 20</p> <p>1 process. That's what I mean, this, this report went</p> <p>2 through, I don't know, three or four different drafts.</p> <p>3 Q. Okay. And did you send the attorneys a, one of</p> <p>4 your expert reports from another case to review first?</p> <p>5 A. I can't recall if I, if I've done that. My</p> <p>6 other expert opinion reports are freely available and I,</p> <p>7 I don't know if, I don't recall if I sent them the</p> <p>8 previous report or they had a previous report.</p> <p>9 Q. Okay. Did, did the attorneys though write any</p> <p>10 portion of your report?</p> <p>11 A. No, no, they asked me, they ask me questions and</p> <p>12 make comments. If, if they, if they add a sentence, you</p> <p>13 know, I have to approve it, I put it into my language.</p> <p>14 It's mostly, it's mostly comments I think and questions.</p> <p>15 Q. Okay.</p> <p>16 VIDEO TECHNICIAN: Carl, I apologize for</p> <p>17 interrupting, this is Kraig. Doctor, can you tilt your</p> <p>18 monitor down a little bit so we can catch --</p> <p>19 THE WITNESS: Yep, sorry.</p> <p>20 VIDEO TECHNICIAN: Thanks, I appreciate it.</p> <p>21 MR. CHARLES: No worries, Kraig. Thanks.</p> <p>22 BY MR. CHARLES:</p> <p>23 Q. Doctor, I'm going to introduce another exhibit,</p> <p>24 you'll see it in the folder in just a moment.</p> <p>25 (Exhibit 2 marked for identification.)</p>
<p style="text-align: right;">Page 19</p> <p>1 record at 9:34 a.m.</p> <p>2 BY MR. CHARLES:</p> <p>3 Q. Okay. So, Dr. Levine, now do you see what has</p> <p>4 been marked Exhibit SL01?</p> <p>5 A. Yes.</p> <p>6 Q. Okay. So have you seen this document before?</p> <p>7 A. Yes.</p> <p>8 Q. And what is this document?</p> <p>9 A. It's my expert opinion report.</p> <p>10 Q. That you submitted in this case, right?</p> <p>11 A. Yes.</p> <p>12 Q. Okay. Did anyone besides you contribute to</p> <p>13 writing this report?</p> <p>14 A. Well, I, the report is an evolutionary document</p> <p>15 between the attorneys and myself.</p> <p>16 Q. Okay. Can you tell me what you mean by</p> <p>17 evolutionary document between yourselves and the</p> <p>18 attorneys?</p> <p>19 A. Well, I have conversations with the attorneys,</p> <p>20 they have certain issues, they, they've read a prior</p> <p>21 expert opinion report and they ask me questions and make</p> <p>22 comments, they and their, I don't really know their</p> <p>23 entire staff and how many people at the attorneys'</p> <p>24 office are, are involved with this, but I communicate</p> <p>25 with one or two attorneys and it's a back and forth</p>	<p style="text-align: right;">Page 21</p> <p>1 Q. Okay.</p> <p>2 MR. CHARLES: So for the record, I'm</p> <p>3 showing Dr. Levine what has been marked as SL02.</p> <p>4 Q. Dr. Levine, can you see this document?</p> <p>5 A. No, no, my SL1 is still up in front of me.</p> <p>6 Q. Okay. So click the back arrow to go back on</p> <p>7 your browser.</p> <p>8 A. And, and still that's the second item is not</p> <p>9 listed yet.</p> <p>10 Q. Okay.</p> <p>11 MR. DAVID: Doctor, go ahead and refresh</p> <p>12 your browser and see if it shows up then.</p> <p>13 THE WITNESS: Refresh my browser. Okay,</p> <p>14 now I see it, yes. Thank you.</p> <p>15 Q. Okay.</p> <p>16 A. Click on it?</p> <p>17 Q. Yes, please, so that you can view it.</p> <p>18 A. Yes, my CV.</p> <p>19 Q. Okay. So you do recognize this document then?</p> <p>20 A. I do.</p> <p>21 Q. And is this the CV that you submitted in this</p> <p>22 case as Exhibit A to your expert report?</p> <p>23 A. Yes.</p> <p>24 Q. Okay. And are you aware, Doctor, of anything</p> <p>25 sitting here today that needs to be updated or corrected</p>

<p style="text-align: right;">Page 22</p> <p>1 on, on your CV?</p> <p>2 A. Probably, yes.</p> <p>3 Q. And what are those things?</p> <p>4 A. Well, I don't know, I can't recall the date in</p> <p>5 which I submitted this, it's probably early February.</p> <p>6 On March the 30th I had another deposition, let's see if</p> <p>7 I can look on where it says my depositions.</p> <p>8 Q. Was that a deposition in the case BPJ versus</p> <p>9 West Virginia Department of Education?</p> <p>10 A. Yes.</p> <p>11 Q. Okay.</p> <p>12 A. And probably on the, on my last invited</p> <p>13 articles, published articles, let me see, that would be</p> <p>14 on page -- oh, yes, this must be a very old CV because</p> <p>15 I've had additional publications. The most important</p> <p>16 publications that are missing from that are Archives of</p> <p>17 Sexual Behavior in November 2021 called Reflections, it</p> <p>18 starts with Reflections of a Clinician About the</p> <p>19 Treatment of Transgender Youth, something like that,</p> <p>20 that's not the exact title. And the more recent article</p> <p>21 in the Journal Marital &amp; Sexual Therapy published in</p> <p>22 February of this year online called Reconsidering</p> <p>23 Informed Consent For the Treatment of Transgender</p> <p>24 Identified Children, Adolescents and Young Adults.</p> <p>25 Q. Okay. So just to confirm, your report was</p>	<p style="text-align: right;">Page 24</p> <p>1 specific question. Did you, did you, were you a guest</p> <p>2 on a podcast in January and is that reflected on this</p> <p>3 version of your CV?</p> <p>4 A. I was, I was, I did have a, that is not on here</p> <p>5 either.</p> <p>6 Q. Okay.</p> <p>7 A. I must have sent, yeah, that's true.</p> <p>8 Q. Okay. But otherwise generally, Dr. Levine, this</p> <p>9 is a list of your publications, your experience and your</p> <p>10 other credentials, right?</p> <p>11 A. It is.</p> <p>12 Q. All right. Did you, Dr. Levine, submit a</p> <p>13 bibliography with your report in this case?</p> <p>14 A. I don't think that's a, there is a bibliography</p> <p>15 in this case, I don't think I submitted it, I think it's</p> <p>16 a combination of things from other reports.</p> <p>17 Q. So let me, let me clarify. You did provide</p> <p>18 citations in your report of course, right, Dr. Levine?</p> <p>19 A. Yes.</p> <p>20 Q. Okay. And I'm representing to you that there</p> <p>21 was no bibliography submitted in this report.</p> <p>22 A. I haven't, I don't recall submitting a, an</p> <p>23 accurate list of everything that I cited in this report.</p> <p>24 It's not that it doesn't exist, it's that I don't, I</p> <p>25 don't think, I think it's a combination of previous</p>
<p style="text-align: right;">Page 23</p> <p>1 served in February with an incorrect version of your CV,</p> <p>2 an incomplete version?</p> <p>3 A. Well, I think when I first made contact with,</p> <p>4 with this law firm this was a reasonably correct CV.</p> <p>5 Q. I understand that. But you just identified an</p> <p>6 article that was submitted in November and this report</p> <p>7 was not served on plaintiffs until February, so I'm just</p> <p>8 confirming that --</p> <p>9 A. This must be, this must be my mistake, this is</p> <p>10 not the attorney's.</p> <p>11 Q. Okay. Dr. Levine, if you could just wait until</p> <p>12 I finish the question please before you respond.</p> <p>13 A. Okay.</p> <p>14 Q. So just to confirm what you just said, there's</p> <p>15 an article you said that was published in November of</p> <p>16 '21 that was not included on the CV which was submitted</p> <p>17 in February?</p> <p>18 A. Well, it's not included here, so obviously</p> <p>19 that's right.</p> <p>20 Q. Okay. Is there anything else that you can</p> <p>21 identify from the CV that might be missing or not</p> <p>22 accurate?</p> <p>23 A. Well, you know, the CV is 21 pages, I don't know</p> <p>24 how much time you want me to go through.</p> <p>25 Q. Fine, fair enough. Let me ask you a more</p>	<p style="text-align: right;">Page 25</p> <p>1 reports and additions, you know, in the --</p> <p>2 Q. That's okay, Dr. Levine. What I just need to</p> <p>3 know is whatever you cited in your report is what you</p> <p>4 have relied on for your opinions in this case, right?</p> <p>5 A. Yes.</p> <p>6 Q. Okay. So then since the time you wrote and</p> <p>7 submitted this report, are there other records or</p> <p>8 documents that you read or relied upon besides the ones</p> <p>9 you mentioned earlier for those cited in your report?</p> <p>10 A. I'm hesitating to answer the question because</p> <p>11 there's hardly a day that goes by that I'm not reading</p> <p>12 something or rereading something.</p> <p>13 Q. I understand. Let me, let me rephrase. You've,</p> <p>14 you've not relied on anything not cited in your report</p> <p>15 for any opinions in your report?</p> <p>16 A. Oh, yes, the opinions in my report are based</p> <p>17 upon things that I have cited.</p> <p>18 Q. Okay, great. So going back to your CV, or more</p> <p>19 specifically to your CV, Dr. Levine, does that document</p> <p>20 accurately reflect your educational and employment</p> <p>21 history?</p> <p>22 A. I would presume it does, yes.</p> <p>23 Q. Okay. So on Page 3 of your report, not of your</p> <p>24 CV, but on Page 3 of your report you list a number of</p> <p>25 grants that you've been the recipient of over the course</p>

<p style="text-align: right;">Page 26</p> <p>1 of your career, right?</p> <p>2 A. Yes.</p> <p>3 Q. Okay. You listed 23 separate pharmaceutical</p> <p>4 company grants to study various pro-sexual medications,</p> <p>5 right?</p> <p>6 A. Yes.</p> <p>7 Q. Were any of these 23 grants related to the</p> <p>8 treatment of gender dysphoria in transgender people?</p> <p>9 A. No.</p> <p>10 Q. And were any of the grants related to the</p> <p>11 treatment, any kind of treatment of prepubertal children</p> <p>12 with gender dysphoria?</p> <p>13 A. No.</p> <p>14 Q. Or adolescents with gender dysphoria?</p> <p>15 A. No.</p> <p>16 Q. You also list in that same section in your</p> <p>17 report, Dr. Levine, that you received a U.S. National</p> <p>18 Institute of Health grant for the study of sexual</p> <p>19 consequences of systemic lupus erythematosus and that</p> <p>20 you were a co-principle investigator. Does that ring a</p> <p>21 bell, is that accurate?</p> <p>22 A. It is accurate.</p> <p>23 Q. Okay. And did this grant have to do with the</p> <p>24 study of anything related to gender dysphoria?</p> <p>25 A. No.</p>	<p style="text-align: right;">Page 28</p> <p>1 A. Only to the extent that the grant helped us to</p> <p>2 set up the Center For Marital &amp; Sexual Health. The</p> <p>3 Center For Marital &amp; Sexual Health had a program called</p> <p>4 the Case Western Reserve Gender Identity Clinic, and so</p> <p>5 this was, this was not a grant for research, this was a</p> <p>6 grant for the establishment, the administrative</p> <p>7 establishment of our center that dealt with many sexual,</p> <p>8 all sexual things including trans phenomenon. We didn't</p> <p>9 in those days call it so much trans phenomenon, but we</p> <p>10 called it gender identity problems.</p> <p>11 Q. Right. So one of the grants was used to start</p> <p>12 the Center for Marital &amp; Sexual Health, but those five</p> <p>13 separate grants were not for the study or, or direct</p> <p>14 treatment under the Sihler Mental Health Foundation?</p> <p>15 A. That's correct.</p> <p>16 Q. Okay. But the Center For Marital &amp; Sexual</p> <p>17 Health, as a clinician there you saw a wide range of</p> <p>18 patients there, right?</p> <p>19 A. Yes.</p> <p>20 Q. With a variety of problems related to sexuality</p> <p>21 or sexual well-being?</p> <p>22 A. Yes.</p> <p>23 Q. Okay. And did you treat any children with</p> <p>24 gender dysphoria at the Center For Marital &amp; Sexual</p> <p>25 Health?</p>
<p style="text-align: right;">Page 27</p> <p>1 Q. Or transsexualism?</p> <p>2 A. No.</p> <p>3 Q. Or the study of transgender adults?</p> <p>4 A. No.</p> <p>5 Q. Or transgender adolescents?</p> <p>6 A. None of the above.</p> <p>7 Q. Okay. Or prepubertal children with gender</p> <p>8 dysphoria?</p> <p>9 A. I think you asked me that question already.</p> <p>10 Q. I was speaking, Dr. Levine, with respect to this</p> <p>11 specific grant. I asked you with regard to the previous</p> <p>12 23, but.</p> <p>13 A. No, this grant did not involve knowingly</p> <p>14 transgender people.</p> <p>15 Q. Okay. You also list that you received five</p> <p>16 separate grants from the private Sihler Mental Health</p> <p>17 Foundation, is that correct?</p> <p>18 A. Yes.</p> <p>19 Q. Of these five separate grants did any of them</p> <p>20 relate to the study or treatment of gender dysphoria?</p> <p>21 A. No.</p> <p>22 Q. And to the study or treatment of transgender</p> <p>23 adolescents?</p> <p>24 A. No.</p> <p>25 Q. Or prepubertal children with gender dysphoria?</p>	<p style="text-align: right;">Page 29</p> <p>1 A. If I can clarify your question, by you do you</p> <p>2 mean me personally or do you mean under me as the</p> <p>3 supervisor of people who did that?</p> <p>4 Q. Let's start with you personally.</p> <p>5 A. Yes, I have only on a rare occasion personally</p> <p>6 treated or directly or indirectly treated a child. My</p> <p>7 center, however, over the years has, has seen children</p> <p>8 and, and I've been involved in the, the treatment as a</p> <p>9 supervisor of those children.</p> <p>10 Q. Okay. So you've reviewed their cases by way of</p> <p>11 your supervision of clinicians at the center, but not</p> <p>12 individually?</p> <p>13 A. That's right.</p> <p>14 Q. Okay. And is that the same for any adolescents</p> <p>15 with gender dysphoria who were seen at the center? In</p> <p>16 the early years I'm talking about now, not in recent</p> <p>17 times.</p> <p>18 A. Well, in the early years I occasionally saw</p> <p>19 personally an older teenager, older adolescent, but in</p> <p>20 the early years you must understand most of the patients</p> <p>21 were adults.</p> <p>22 Q. Okay. So to your knowledge, Dr. Levine, have</p> <p>23 you received any grants to study the treatment -- I'm</p> <p>24 sorry, excuse me. Have you received any grants to study</p> <p>25 treatment for adults with gender dysphoria?</p>

<p style="text-align: right;">Page 30</p> <p>1 A. The specific answer to your question is no, I 2 did not receive grants from independent agencies to 3 study gender dysphoria. 4 Q. Okay. And what about to, did you receive any 5 grants to research or publish about the treatment of 6 gender dysphoria? 7 A. I received a \$5,000 grant to publish, to work 8 on, to develop an article on informed consent which of 9 course involves the treatment of people with gender 10 dysphoria. 11 Q. And what's the name of that grant? 12 A. It's from the Society for Evidence Based Gender 13 Medicine and I, I, I don't really have a, I don't know 14 the answer any further than that, that is a grant number 15 or something, I couldn't tell you. 16 Q. Okay. So is that, that's not a payment through, 17 excuse me, that is not a grant that's received through a 18 foundation? 19 A. No, it's, it was, it was a, a grant payment to 20 work on a project to develop an article. 21 Q. Okay. And when did you receive that grant 22 approximately? 23 A. I think I got, the grant was discussed probably 24 beginning in January or February of 2021 and I think I 25 received the payment or the check in May of 2021.</p>	<p style="text-align: right;">Page 32</p> <p>1 So this organization, SEGM has, was interested 2 in developing an article on informed consent. I had 3 written previously about informed consent, I had 4 published previously about informed consent, and SEGM 5 contacted me about this and they had read some of my 6 other writings and we were in discussion about, about 7 whether this would be a useful contribution -- 8 Q. I'm sorry, Dr. Levine, let me just, let me just 9 stop you there. I, my question was when was the grant 10 initially presented to you, and I appreciate your 11 explanation that this is not a grant in the way that I'm 12 using the word, so let's, let's not call it a grant. 13 I'm going to refer to this as funding because what I was 14 asking about previously were, were in fact 501(c)(3) 15 grants from, from, you know, nonprofit, not for profit 16 organizations. 17 A. Right. 18 Q. So, so let's call this a, a funding that you 19 received from SEGM. When did you, you said previously 20 they approached you in January of '21 with a proposal to 21 write this article, is that right? 22 A. I, I can't, I'm not very confident about whether 23 it's December or January. I do know that at the 24 beginning of the year for no later than February I 25 started writing draft reports, I started writing about</p>
<p style="text-align: right;">Page 31</p> <p>1 Q. Okay. And the Society for Evidence Based Gender 2 Medicine I'm going to refer to today as SEGM, will you 3 know what I'm talking about when I use that term? 4 A. I will. 5 Q. And SEGM is not a National Institute of Health 6 organization, right? 7 A. Correct. 8 Q. And it's not a philanthropic foundation as far 9 as you're aware, right? And by that I mean it is not an 10 organization that receives -- well, let me, let me, let 11 me stop there. Go ahead and answer the question if you 12 know, if you know the response. 13 A. It depends on what we mean philanthropic, I 14 don't know what you mean by philanthropic. 15 Q. Yeah, okay. Did you say, Dr. Levine, you were, 16 you received a check after you published the article? 17 A. No. 18 Q. So walk me through the timeline again. You 19 were, the grant was presented to you when? 20 A. Let me clarify this word grant because grant 21 generally refers to an amount of money given by, given 22 to a 301, a 501(3)(c) organization to conduct a specific 23 project, and so in, in medical literature, in the 24 medical tradition, that's what a grant is, but grant has 25 other meanings.</p>	<p style="text-align: right;">Page 33</p> <p>1 informed consent. And the plan was to write an informed 2 consent general piece and then a piece as it related to 3 children and then a piece that related to young 4 adolescents, a third piece about older adolescents, and 5 then there was some question whether it would, we would 6 have a separate piece on young adults. 7 Q. Okay. So let me, let me stop you there. There 8 were four articles that were, that SEGM provided funding 9 for you to -- 10 A. No. 11 Q. -- write? 12 A. No. You, you've interrupted me and I haven't 13 finished my explanation to the first question. 14 Q. Well, I asked about a timeline, Dr. Levine, and 15 now you're telling me that there are four separate 16 articles. 17 A. No. 18 Q. So I'm trying to clarify what you're saying 19 here. 20 A. So if you would stop interrupting me, please, I 21 don't mean to be impolite. I was trying to explain 22 this. The original idea was that we might need four 23 articles about informed consent because informed consent 24 would be a little different in dealing with a 25 seven-year-old and dealing with a 17-year-old.</p>



<p style="text-align: right;">Page 34</p> <p>1 But as, so in, in, in February I began writing  2 about this and the interactions of the writing with  3 other members from SEGM, it led to a rapid evolution and  4 a very, very different concept as, as the work unfolded.  5 And so the idea of the four articles began to diminish  6 as we added substance and we had more reading and more,  7 more scholarship about, about the article.  8 So by the time I had started writing this in  9 February and the payment for this writing arrived in my,  10 at home in May I believe, I continued writing this and  11 we submitted an article that was so substantially  12 different than what we originally conceived, which is  13 not an unusual thing when you are writing, that the idea  14 of four, four separate articles seemed to have  15 dissipated, it doesn't seem to be necessary.  16 So we submitted this, we submitted this for  17 review I think in the late fall and it eventually got  18 published online in late February of this year, so there  19 was one payment. And the idea of four articles has gone  20 up in smoke and, and we're still thinking about whether  21 there needs to be a follow-up article, but the, but no  22 decision has been made. So the grant was not for four  23 articles, the grant was for this writing project.  24 Q. Okay. So the timeline was payment in May,  25 writing began in February of 2021, it sounds like then</p>	<p style="text-align: right;">Page 36</p> <p>1 didn't go through a peer review process in a traditional  2 journal like you said?  3 A. No, that's incorrect. This article was peer  4 reviewed, it was peer reviewed by three, at least three  5 people.  6 Q. And those three people are members of SEGM?  7 A. No, no.  8 Q. Who was it peer reviewed by?  9 A. The journal sends out a submission, we submitted  10 it to the journal, they sent it out to three people that  11 we don't know the names of who provided a critique of  12 the article. And, and we then responded to those  13 critiques and then we resubmitted the article to, for  14 re-review and we got comments back again from, from the  15 reviewers and then we submitted a final version that was  16 accepted by the editor and the reviewers and that is  17 what is published online Open Access.  18 Q. So --  19 A. SEGM, SEGM had nothing to do with the peer  20 review.  21 Q. Okay. So it was, it was published in a peer  22 review journal is what you're saying?  23 A. Absolutely.  24 Q. And what was the name of that journal, I don't  25 know that I heard you say that?</p>
<p style="text-align: right;">Page 35</p> <p>1 was finally published in its, in its formal version in  2 February of 2022, is that right?  3 A. Yes, online, yeah.  4 Q. Online. And which journal, was it in a journal  5 online?  6 A. Journal, it was published Open Access.  7 Q. Okay.  8 A. In late February this year.  9 Q. And, and can you just tell me what Open Access  10 means?  11 A. Open Access is a program that enables any reader  12 who wants to download the article that they can download  13 it for free. Open Access as opposed to the traditional  14 way that publications have been handled until the last  15 perhaps three years, maybe four years where the only  16 people who could get access to the article were the  17 subscribers to the journal and other people had to get  18 it through a library system, a medical library system  19 where they could pay the publisher for the, for the  20 opportunity to get a copy of the article.  21 Q. I see.  22 A. So Open Access is a way of, of either of  23 allowing more people to read the article without having  24 to pass through a payment system.  25 Q. And, and so because it was Open Access, it</p>	<p style="text-align: right;">Page 37</p> <p>1 A. I, I actually did say it, it's Journal of Sex &amp;  2 Marital Therapy.  3 Q. Did that journal, excuse me. Did that article  4 involve any new data collection on your part?  5 A. Would you repeat that question, please.  6 Q. Yes. Did that article that you were just  7 speaking about involve any new data collection performed  8 by you?  9 A. No, this was a scholarly article synthesizing  10 the literature. It was not inherently a research  11 article where any experiment was done, it was the  12 synthesis of multiple other articles, I think over 100,  13 I think there were 107 articles cited.  14 Q. And you don't generally collect data in this  15 field, right, Dr. Levine?  16 A. I collect clinical experience in this field and  17 I have done data related articles in the past, but  18 including in the '80s on transgenderism. And but in  19 answer to your specific question, generally my work is  20 much more synthetic, that is integrating what I  21 understand from my clinical experience and what I  22 understand from published literature.  23 If you look at my CV you could see that I've  24 been the editor of a major handbook in clinical  25 sexuality which of course integrates all kinds of</p>

<p style="text-align: right;">Page 38</p> <p>1 information in multiple fields, including transgender.</p> <p>2 Q. And so to be more specific, what I mean is you</p> <p>3 don't create, design and implement studies of large</p> <p>4 number of patients, large numbers of patients in trans</p> <p>5 medicine, right?</p> <p>6 A. That's right.</p> <p>7 Q. Do you collect clinical data from other</p> <p>8 clinicians?</p> <p>9 A. Well, I have a team of clinicians that I've</p> <p>10 always worked with and so we have -- I'm hesitating</p> <p>11 because you use the word data. We, I think if you mean</p> <p>12 data in a strict scientific way, the answer is no. If</p> <p>13 you mean data in terms of accumulating clinical</p> <p>14 experience, the answer is of course that's what I've</p> <p>15 been doing all my life.</p> <p>16 Q. Right. So you write about your own clinical</p> <p>17 experience and sometimes reflect on the work of other</p> <p>18 clinicians, right?</p> <p>19 A. That's right.</p> <p>20 Q. You don't yourself then, Dr. Levine, collect</p> <p>21 data through participant studies and analyze it and</p> <p>22 later publish it, right?</p> <p>23 A. I haven't done that for a number of decades. I</p> <p>24 did that in my earlier career.</p> <p>25 Q. Okay. Thank you. And you haven't been part of</p>	<p style="text-align: right;">Page 40</p> <p>1 A. I don't understand what you mean by it, thus the</p> <p>2 answer, the previous answer to the question. Perhaps</p> <p>3 you could explain what you mean by it and I could give</p> <p>4 you a more refined answer.</p> <p>5 Q. Okay. So I understand you're saying -- well,</p> <p>6 how do you understand that term?</p> <p>7 A. Well, I understand it in two ways which is</p> <p>8 reflected in the answer I gave you. A systematic review</p> <p>9 based upon all of the available literature done by a</p> <p>10 committee of people, many of whom are not clinicians but</p> <p>11 who are methodologists, that's what the Cochrane reviews</p> <p>12 do. I am a member of that committee, so I have</p> <p>13 participated in the systematic review in that sense.</p> <p>14 But when you're writing an article expressing concerns,</p> <p>15 opinions or conclusions, of course it is based upon a</p> <p>16 systematic review of, of a literature, but perhaps</p> <p>17 little more selective literature. So I've answered the</p> <p>18 question by two different nuances of understanding of</p> <p>19 what systematic review means.</p> <p>20 Q. Okay. Thank you. So I'm referring to the</p> <p>21 former, not the latter, a systematic review as a summary</p> <p>22 of the medical literature that uses explicit and</p> <p>23 reproducible methods to systematically search critically</p> <p>24 appraised and synthesize on a specific issue, that</p> <p>25 sounds like the former description that you were</p>
<p style="text-align: right;">Page 39</p> <p>1 a published systematic review, right?</p> <p>2 A. I don't understand that question.</p> <p>3 Q. Let me be more specific. You have not been an</p> <p>4 author on a published systematic review of literature,</p> <p>5 scientific literature related to trans medicine?</p> <p>6 A. That's not correct at all.</p> <p>7 Q. Okay. What is the systematic published review</p> <p>8 that you have been involved with?</p> <p>9 A. Well, the, the article that I just mentioned</p> <p>10 that's Open Access, and that has been downloaded as of</p> <p>11 yesterday 21,433 times, is in fact a systematic review</p> <p>12 of many aspects relating to informed consent. And the</p> <p>13 previous publications that I've had on, in this field</p> <p>14 also have involved the integration of published data and</p> <p>15 my, and my clinical experience, so I have systematically</p> <p>16 reviewed these things.</p> <p>17 I don't think I'm permitted to talk in any</p> <p>18 detail about this, but I am a member of a Cochrane group</p> <p>19 out of Ireland that is participating, that is creating</p> <p>20 documents for the review of puberty blockers and, and</p> <p>21 cross sex hormones for children, for adolescents, but</p> <p>22 I'm not able to talk about the results of that at this</p> <p>23 point.</p> <p>24 Q. Okay. Do you understand what a systematic</p> <p>25 review is in the way that researchers use that term?</p>	<p style="text-align: right;">Page 41</p> <p>1 providing?</p> <p>2 A. That's right.</p> <p>3 Q. So you're saying, assuming a systematic review</p> <p>4 is what I just described, have you ever performed a</p> <p>5 systematic review under that definition?</p> <p>6 A. I think I've answered that question already.</p> <p>7 Did I --</p> <p>8 Q. Are you, so your, your answer to that is the</p> <p>9 Cochrane review?</p> <p>10 A. Yes.</p> <p>11 Q. And when, when did you -- sorry, let me back up.</p> <p>12 That Cochrane review has not yet been published?</p> <p>13 A. That's right.</p> <p>14 Q. When did you join that Cochrane review</p> <p>15 committee?</p> <p>16 A. Sometime in 2021, probably middle.</p> <p>17 Q. Okay. So other than that Cochrane review</p> <p>18 committee, any other systematic reviews that fit that</p> <p>19 description?</p> <p>20 A. No, I have not been part of the commission or</p> <p>21 the group of people who have performed those reviews.</p> <p>22 This, the Cochrane is the only time I have been involved</p> <p>23 with that level.</p> <p>24 Q. Okay. Thank you. So on Page 3 of your report,</p> <p>25 Dr. Levine, the last lecture that you list having given</p>

<p style="text-align: right;">Page 42</p> <p>1 is on March 12th of 2021?</p> <p>2 A. Yeah, this is --</p> <p>3 Q. Can you see your report?</p> <p>4 A. You're talking about my CV, right?</p> <p>5 Q. No, I'm looking at Page 3 of your report that's</p> <p>6 Exhibit 1.</p> <p>7 A. I have to get, you have to help me get back to</p> <p>8 that. Do I have to refresh?</p> <p>9 Q. I would say try to back arrow and then try to</p> <p>10 refresh, yes.</p> <p>11 A. Yeah, all right. All right. Page 3 you said?</p> <p>12 Q. Yes, of your report.</p> <p>13 A. All right.</p> <p>14 Q. It's at the bottom of Page 3.</p> <p>15 A. "Psychotherapy approaches, invited lecturer at</p> <p>16 the American Association." I'm sorry, this is really a,</p> <p>17 this is another aspect of -- I'm sorry, ask me your</p> <p>18 question again, please.</p> <p>19 Q. Sure. So on Page 3 of your report at the</p> <p>20 bottom, it's Paragraph No. 6, it begins, "Over the years</p> <p>21 I have lectured frequently to professional groups," do</p> <p>22 you see that sentence?</p> <p>23 A. Yes.</p> <p>24 Q. Okay. "During the previous two years these</p> <p>25 lectures have included." So my question is, looking at</p>	<p style="text-align: right;">Page 44</p> <p>1 Q. So I was going to ask you about the four-hour</p> <p>2 workshop at the Harvard Student Clinic, excuse me,</p> <p>3 Student Health Clinic at Boston in you said January 26th</p> <p>4 of this year?</p> <p>5 A. Yes.</p> <p>6 Q. What was that workshop about generally?</p> <p>7 A. I was, it was generally about the chain of trust</p> <p>8 about, about, it was, it was raising -- well, let me</p> <p>9 start again. It was first about identity in general and</p> <p>10 then placing gender identity in the context of sexual</p> <p>11 identity in the context of human identity. So that was</p> <p>12 a very important beginning of, of talk about the</p> <p>13 characteristics of identity in general and how those</p> <p>14 characteristics apply to gender identity and orientation</p> <p>15 and, and the intention component of sexual identity.</p> <p>16 And then it was about informed consent and it</p> <p>17 was about the mental wellness of transgender people,</p> <p>18 especially adolescents, because at Harvard University</p> <p>19 they're dealing with adolescents, adolescent Harvard</p> <p>20 students. So we talked about what is the basis of, what</p> <p>21 is the scientific basis and I discussed about the Dutch</p> <p>22 experiment and the limitations of that experiment.</p> <p>23 I talked a little bit about language and how the</p> <p>24 effectiveness of WPATH's political advocacy and in</p> <p>25 educating mental health professionals and how the data</p>
<p style="text-align: right;">Page 43</p> <p>1 the, the sub point No. 1, it's entitled, "The mental</p> <p>2 health professional's role with the transgender," do you</p> <p>3 see that?</p> <p>4 A. Yes.</p> <p>5 Q. So my question to you is, have you given any</p> <p>6 lectures since that March 12, 2021 lecture you list</p> <p>7 there?</p> <p>8 A. Yes, I have.</p> <p>9 Q. And, and can you please tell me the names of</p> <p>10 those lectures?</p> <p>11 A. On January 26, 2022 I gave a four-hour workshop</p> <p>12 to the Harvard student health service faculty or staff</p> <p>13 on transgender issues. I'm in preparation, let's see,</p> <p>14 where else have I talked. I have, in June of last year</p> <p>15 I was invited to give three lectures on transgender</p> <p>16 issues at the Henry Ford Hospital in Detroit in June of</p> <p>17 2022, so I'm in the process of preparing those lectures.</p> <p>18 I am blocking on several other lectures. If I could</p> <p>19 pull up, I don't know if I can, if I would, if I pulled</p> <p>20 up my CV, my current CV I could give you, I could answer</p> <p>21 that question more specifically.</p> <p>22 Q. That's okay, Dr. Levine, the answer you provided</p> <p>23 is sufficient. And I have a few more questions on the</p> <p>24 report, so let's stay here for the time being.</p> <p>25 A. Okay.</p>	<p style="text-align: right;">Page 45</p> <p>1 that, that the treatment protocols for, for trans people</p> <p>2 have, are based more on precedent on history than they</p> <p>3 are about the scientific verification of the claims of</p> <p>4 those treatments. And that got summarized in terms of</p> <p>5 what I call the chain of trust upon that medical</p> <p>6 education rests upon, and that is every medical student</p> <p>7 or every psychiatrist or mental health professional has</p> <p>8 to learn over 200 different disorders and it's not</p> <p>9 possible for anybody to understand the scientific basis</p> <p>10 of the treatment recommendations. Education, medical</p> <p>11 education trickles down from policymakers from</p> <p>12 researchers to various teachers and the teachers take</p> <p>13 that information and then give it to their students and</p> <p>14 the chain of trust is based upon exactly that, trusting</p> <p>15 that --</p> <p>16 Q. Okay. Dr. Levine, I said generally what the,</p> <p>17 what the workshop was about, we're now into specifics,</p> <p>18 so I think that's a sufficient answer. Can I ask, did</p> <p>19 you provide this workshop in person at Cambridge?</p> <p>20 A. I was scheduled to do it in person and Jet Blue</p> <p>21 changed the time of my flight that made it impossible</p> <p>22 for me to get there, so it was virtual.</p> <p>23 Q. I see. And you said this was a workshop</p> <p>24 provided to the clinical staff of that clinic?</p> <p>25 A. Yes.</p>



<p style="text-align: right;">Page 46</p> <p>1 Q. Okay. So as far as you understand, there were 2 not any Harvard University students in attendance, 3 right? 4 A. As far as I know of. 5 Q. And did they inform you about how many people, 6 how many health student clinic staff were in attendance 7 at your workshop? 8 A. I think there were about 50. 9 Q. Okay. But was that your estimation or did 10 someone tell you that? 11 A. Well, I'm not sure, no, I had all these gallery 12 views in front of me. 13 Q. I see. So you're estimating based upon the 14 number of little boxes in the Zoom screen potentially? 15 A. I think the organizer told me too, but it's not 16 something I committed to memory. 17 Q. Fair enough. And who was the organizer who 18 invited you to give this workshop? 19 A. Barbara Lewis who's the head of, the head person 20 of that unit, she's a psychiatrist. 21 Q. Thank you. So you mentioned before we started 22 talking about this workshop that you are scheduled to 23 give lectures at the Henry Ford Hospital department of 24 psychiatry in Detroit in June of this year? 25 A. Yes.</p>	<p style="text-align: right;">Page 48</p> <p>1 that's all. 2 Q. Okay. It doesn't have to be exhaustive and you 3 didn't indicate it was, I'm just confirming for the 4 record that that's accurate. So let me, let me just 5 follow up on a few other matters I know you've been 6 involved with, and after we go through this, Dr. Levine, 7 we'll take a brief break for water and the restroom, 8 okay? 9 A. Fine. 10 Q. So you've offered expert testimony in a case 11 entitled Edmo v. Corizon in Idaho approximately 2019, 12 2020? 13 A. You know, I'm not clear about that case because 14 I think my name was entered into that case. What I did 15 was give a -- I'm sorry, let me just, I'm confused, 16 that, that case confuses me. I think I might have given 17 expert testimony in that case if that case is about 18 athletics, but if that case is about a transgender 19 prisoner, that's a whole other matter. 20 Q. Okay. So the case about athletics in Idaho is 21 entitled Hecox, and that you can affirmatively say you 22 provided testimony in, right? 23 A. That, yes, yes. 24 Q. Okay. But as far as Edmo v. Corizon, you're not 25 sure that you affirmatively provided any testimony, but</p>
<p style="text-align: right;">Page 47</p> <p>1 Q. Okay. So those lectures haven't happened yet, 2 those are just ones that are on your schedule to happen? 3 A. Yes. I think I, I also gave grand rounds in the 4 fall of 2021 at Akron General. Not at Akron General, 5 at, yes, at Akron General Hospital, department of 6 psychiatry and behavioral health. 7 Q. Yes, that's, that's listed here, Dr. Levine. 8 But my question is, your, your report says you have 9 given these lectures and the, the Henry Ford, I'm just 10 confirming the Henry Ford lectures haven't yet happened, 11 that's, that's my question? 12 A. That's correct, I think I made that clear. 13 Q. Okay. So on Page 5 of your report, just 14 scrolling down from where we were, you list your 15 experience as an expert witness. I just want to confirm 16 that, I want to confirm the various cases that you have 17 served and provided expert testimony either by 18 deposition or trial testimony. So you've listed some 19 cases that you've been involved with here on Page 5, but 20 this is not an exhaustive list, right? What I mean by 21 that is, this is not a complete and total list of all 22 the cases of which you've provided testimony? 23 A. I think quite recently I, I became aware that it 24 wasn't an exhaustive list and I, I think either the 25 exhausted list would be 19 or 20 now. I was unaware,</p>	<p style="text-align: right;">Page 49</p> <p>1 rather that your name was mentioned? 2 A. Yes, that's what I think, yes. 3 Q. Okay. That's fine. And what about the case out 4 of California regarding a prisoner Norsworthy versus 5 Beard, you submitted expert testimony in that case 6 though, right? 7 A. I did just a report, I was never deposed. 8 Q. Okay. 9 A. Yeah. 10 Q. And a case in Florida, Klair versus Florida 11 Department of Management Services, a case from 2019 12 about health insurance coverage? 13 A. Yes, I think I, I had a deposition in that case. 14 Q. And a case also in Florida, Keohane versus Jones 15 in 2017 which was about gender affirming care for 16 someone in prison? 17 A. I testified at trial. 18 Q. And I believe you also gave a deposition in that 19 case as well, correct? 20 A. At the moment I don't recall, but I do recall 21 being in trial. 22 Q. Okay. And then there was a case Soneeya versus 23 Turco and you gave a number of different kinds of 24 testimony in that case that includes two depositions and 25 some trial testimony in 2019, right?</p>

<p style="text-align: right;">Page 50</p> <p>1 A. Yes.</p> <p>2 Q. And more recently, and by that I mean either in</p> <p>3 late '21 or early '22, were you deposed in a prison case</p> <p>4 in Connecticut, I believe the name is Clark versus</p> <p>5 Department of Corrections or something like that?</p> <p>6 A. That's correct.</p> <p>7 Q. Okay. And, and then as you said earlier today,</p> <p>8 you gave a deposition just about a month ago in the case</p> <p>9 BPJ versus West Virginia, a case about law banning trans</p> <p>10 children from playing on sports teams, right?</p> <p>11 A. March 30th.</p> <p>12 Q. March 30th, okay. And in that case was your</p> <p>13 testimony about athletics or what was your testimony</p> <p>14 about there?</p> <p>15 A. That's a double question. It was not about</p> <p>16 athletics, my testimony was about the science of trans</p> <p>17 care.</p> <p>18 Q. Okay.</p> <p>19 MR. CHARLES: Let's go ahead and go off the</p> <p>20 record, Kraig and Kelley, please.</p> <p>21 VIDEO TECHNICIAN: We're off record at</p> <p>22 10:29 p.m.</p> <p>23 (A break was taken at 9:29 a.m.)</p> <p>24 VIDEO TECHNICIAN: This is media No. 2 in</p> <p>25 the deposition of Dr. Stephen Levine. Today is</p>	<p style="text-align: right;">Page 52</p> <p>1 A. They, I think they, I think they've been stalled</p> <p>2 in some way. The committee that I was part of no longer</p> <p>3 meets and I'm not exactly sure what SEGM is up to in</p> <p>4 terms of ever publishing guidelines. So I don't think I</p> <p>5 can answer that question other than the committee I was</p> <p>6 on no longer meets.</p> <p>7 Q. And that was, just to confirm, that was the</p> <p>8 psychiatry committee?</p> <p>9 A. No, it was, it wasn't, no. It was a group of</p> <p>10 mental health professionals, but they weren't all</p> <p>11 psychiatrists.</p> <p>12 Q. Okay. Was there a formal name for that</p> <p>13 committee, do you know?</p> <p>14 A. I think there was perhaps an informal name for</p> <p>15 it.</p> <p>16 Q. Informal would be fine, thank you.</p> <p>17 A. Yeah, I think it was probably called the</p> <p>18 treatment team or the psychotherapy team.</p> <p>19 Q. And when --</p> <p>20 A. That's the best I can do.</p> <p>21 Q. That's fine, that's fine. Do you recall</p> <p>22 approximately when the last meeting you had with that</p> <p>23 committee occurred?</p> <p>24 A. I, I don't think I can accurately tell you, but</p> <p>25 I would guesstimate in December of '21.</p>
<p style="text-align: right;">Page 51</p> <p>1 April 27, 2022. We're going back on the record at</p> <p>2 10:36 a.m.</p> <p>3 BY MR. CHARLES:</p> <p>4 Q. Okay. Dr. Levine, talking about your writing</p> <p>5 credentials, you've testified previously that you were</p> <p>6 involved in drafting portions of the WPATH standards of</p> <p>7 care Version 5, right?</p> <p>8 A. Yes, I was the chairman of that group.</p> <p>9 Q. And besides that, have you developed -- let me</p> <p>10 back up. Have you helped to develop treatment</p> <p>11 guidelines for the treatment of children or adolescents</p> <p>12 with gender identity issues?</p> <p>13 A. If you mean have I been part of a national or</p> <p>14 international group that tried to, to publish, that</p> <p>15 published guidelines about the treatment of these</p> <p>16 individuals, the answer is no. But in my November of</p> <p>17 2021 article I gave, I offered my opinions about what</p> <p>18 the evaluation of adolescents and children ought to</p> <p>19 consist of. In that sense I'm hoping that would</p> <p>20 influence the guidelines of those committees who might</p> <p>21 function in the future.</p> <p>22 Q. I see. When we spoke in September of 2021 for</p> <p>23 the Kadel vs. Folwell deposition, you said that you were</p> <p>24 working with SEGM to develop some treatment guidelines.</p> <p>25 What, what happened to those?</p>	<p style="text-align: right;">Page 53</p> <p>1 Q. Okay. Thank you. Okay. Dr. Levine, I'm going</p> <p>2 to introduce another exhibit now.</p> <p>3 (Exhibit 3 marked for identification.)</p> <p>4 A. It's not on my list.</p> <p>5 Q. It's taking a moment to load. Okay. Refresh</p> <p>6 the page and see if you can see it now.</p> <p>7 A. I see it.</p> <p>8 Q. Okay.</p> <p>9 MR. CHARLES: So for the record, I'm</p> <p>10 showing the witness what has been marked as Exhibit</p> <p>11 SL03.</p> <p>12 Q. Have you seen this document before, Dr. Levine?</p> <p>13 A. Oh, that's my deposition. I don't, I don't know</p> <p>14 if I have read this deposition.</p> <p>15 Q. But it, you understand it to be the transcript</p> <p>16 of your deposition from March 30th that we discussed?</p> <p>17 A. Yes.</p> <p>18 Q. Okay. So just to orient you to the document,</p> <p>19 Dr. Levine, the page numbers are located in the lower</p> <p>20 right-hand corner.</p> <p>21 A. I see.</p> <p>22 Q. Okay. Just a moment. Okay. We'll come back to</p> <p>23 this in just a moment, Dr. Levine, if you'll just leave</p> <p>24 that on your screen.</p> <p>25 A. Mr. Charles, is there a way that I could</p>

<p style="text-align: right;">Page 54</p> <p>1 actually see you when you're talking to me?</p> <p>2 Q. So will you confirm that you are only working</p> <p>3 with one screen right now?</p> <p>4 A. I, I have a picture of myself and I have a</p> <p>5 picture of document 3.</p> <p>6 Q. I think unfortunately, Dr. Levine, because the</p> <p>7 deposition is being recorded, I don't know that you can</p> <p>8 view other windows.</p> <p>9 A. Okay.</p> <p>10 MR. CHARLES: Kraig, is that right?</p> <p>11 VIDEO TECHNICIAN: That's, that's accurate,</p> <p>12 yes, unfortunately we have to spotlight the witness and</p> <p>13 to, to have a backup recording.</p> <p>14 MR. CHARLES: Yeah, that's my</p> <p>15 understanding, so.</p> <p>16 BY MR. CHARLES:</p> <p>17 Q. Okay. So in your report in your CV, Dr. Levine,</p> <p>18 you talk about your employment experience as an</p> <p>19 assistant professor of psychiatry at Case Western</p> <p>20 Reserve University Medical School, is that right?</p> <p>21 A. Yes, that's how I began with that distinction.</p> <p>22 Q. But you're not currently full-time, a full-time</p> <p>23 employee at the University Medical School, right?</p> <p>24 A. No, I'm not.</p> <p>25 Q. And you haven't been since approximately 1993?</p>	<p style="text-align: right;">Page 56</p> <p>1 A. They, they present their cases to, to this, to</p> <p>2 the group and I'm the leader of the group.</p> <p>3 Q. I see. So just to make sure I understand, so</p> <p>4 the, the staff members at DELR who are other clinicians,</p> <p>5 psychiatrists, mental healthcare providers, they present</p> <p>6 the cases and the residents listen?</p> <p>7 A. Yes, and on rare occasion I present a case.</p> <p>8 Q. Okay. Do you, just offhand, do you recall the</p> <p>9 last time you did that?</p> <p>10 A. Yesterday.</p> <p>11 Q. Oh, okay. Were you in person or was it virtual?</p> <p>12 A. I had a resident with me in my office and the</p> <p>13 staff was virtual, but they were all in their individual</p> <p>14 offices in our suite.</p> <p>15 Q. So together, but separate?</p> <p>16 A. Yes.</p> <p>17 Q. Okay. Before your case presentation yesterday,</p> <p>18 Dr. Levine, do you offhand recall the last time you gave</p> <p>19 one of those?</p> <p>20 A. To make this very simple, this is done Tuesdays</p> <p>21 and Thursdays every week.</p> <p>22 Q. Thank you. I, I meant, you said on rare</p> <p>23 occasion you present yourself, so I was just wondering,</p> <p>24 you said you presented yesterday, but then that it was</p> <p>25 rare for you to do so because typically it's the staff</p>
<p style="text-align: right;">Page 55</p> <p>1 A. Correct.</p> <p>2 Q. And you don't teach graduate or undergraduate in</p> <p>3 the traditional understanding of that, right?</p> <p>4 A. Right.</p> <p>5 Q. But you do sometimes give workshops?</p> <p>6 A. And grand rounds presentations.</p> <p>7 Q. Seminars or lectures as well?</p> <p>8 A. Yes. And I also have residents spend time with</p> <p>9 me seeing patients with me.</p> <p>10 Q. So you do have a resident who might visit your</p> <p>11 clinic at DELR for a period of time, correct?</p> <p>12 A. Yes.</p> <p>13 Q. Okay. And you also lead two clinical case</p> <p>14 conferences per week where students, residents or</p> <p>15 members of the community come in and you discuss case</p> <p>16 studies, right?</p> <p>17 A. We discuss people in treatment and most, most of</p> <p>18 the presenters are staff members, the residents are</p> <p>19 mostly just passive listeners.</p> <p>20 Q. Say that again for me, the, the presenters are</p> <p>21 who?</p> <p>22 A. They're members of the staff.</p> <p>23 Q. Okay.</p> <p>24 A. They're not in training any longer.</p> <p>25 Q. Okay.</p>	<p style="text-align: right;">Page 57</p> <p>1 who were presenting. So I was just wondering when</p> <p>2 offhand was the last time you did that since you said</p> <p>3 it's somewhat rare that you are the presenter?</p> <p>4 A. One month ago.</p> <p>5 Q. Okay. Thank you. When you were teaching at</p> <p>6 Case, excuse me. When you were working full-time at</p> <p>7 Case Western from 1974 to 1993 did your teaching take</p> <p>8 place in the, in the traditional way I just discussed as</p> <p>9 providing graduate or undergraduate courses?</p> <p>10 A. I occasionally would give a lecture in someone</p> <p>11 else's semester long course, but most of my teaching had</p> <p>12 to do with case conferences and, and leadership in I</p> <p>13 think five separate sexual oriented clinics that we ran.</p> <p>14 So I'm not, in psychiatry psychiatrists are not teachers</p> <p>15 generally as college professors are teachers or people</p> <p>16 teaching graduate schools, it's much more service</p> <p>17 oriented. Teaching in the, in the provision of clinical</p> <p>18 services, in that sense I am a teacher.</p> <p>19 Q. Teaching by doing it it sounds like more?</p> <p>20 A. No, it's teaching by supervision, teaching by</p> <p>21 doing it and teaching by, by having people watch me do</p> <p>22 it, so to speak.</p> <p>23 Q. Understand.</p> <p>24 A. Yeah.</p> <p>25 Q. And, and your work at Case Western from '74 to</p>

<p style="text-align: right;">Page 58</p> <p>1 '93, it wasn't specifically about transgender people or 2 gender dysphoria, it was about the whole spectrum of 3 identity and sexuality, right? 4 A. But included, it included the Case Western 5 Reserve Gender Identity Clinic which I founded in 1974 I 6 think. 7 Q. Understand. I'm just confirming that your area 8 of supervision and, and teaching was much broader, 9 included many other things? 10 A. Well, yes. 11 Q. Okay. So if you would, I'm going to reference 12 your report, if it would be helpful for you to have it 13 in front of you. On Page 1 it references, or rather 14 states that in 1974 you founded that gender identity 15 clinic that you just mentioned and that you served as 16 co-director since that time, is that right? 17 A. The answer to your question is that's right, but 18 I'm looking at your Exhibit 3, but I don't think you're 19 making reference to Exhibit 3 at the moment. 20 Q. No, I'm referencing your report. And if it 21 would be helpful, you can hit the back button and 22 refresh and go back to that exhibit. But I think you 23 can probably talk about, you can probably answer my 24 questions without looking at it, but if you would like 25 to have it in front of you, it's Exhibit 1.</p>	<p style="text-align: right;">Page 60</p> <p>1 independent? 2 A. Yes, we were no longer the Case Western Reserve 3 Gender Identity Clinic because that would have the 4 imprimatur of the University and since we didn't belong 5 to the University it didn't seem appropriate to change 6 that, to use that name. And the, we didn't realize 7 that, but the University wrote us a letter and, and told 8 us about that and we just changed the name. 9 Q. Understood. And is that also the point at which 10 you became clinical faculty at Case Western, right? 11 A. Yes. Sometimes the term geographic professor, 12 meaning I'm on location and it means that I'm salaried, 13 and clinical professor means that I retain my rank as 14 professor and my, my relationship to the University, but 15 I'm no, I'm no longer onsite, that is I'm not geographic 16 and I no longer get a salary for my work. 17 Q. I see. And did you practice at any point, Dr. 18 Levine, at the University Hospital there in Cleveland? 19 A. Well, I had from, from 1970 when I started my 20 residency program and until I left the University I, I 21 practiced onsite geographically, took care of patients 22 in the hospital and in the outpatient department. And 23 after I left I still had privileges to take care of 24 people in the hospital, but eventually since I wasn't 25 doing that I gave that up.</p>
<p style="text-align: right;">Page 59</p> <p>1 A. Okay, all right. 2 Q. Did the, did the gender, was the Gender Identity 3 Clinic ever synonymous with the Center For Marital &amp; 4 Sexual Health? 5 A. The Center For Marital &amp; Sexual Health, when I 6 left the University's geographic full-time employment 7 status I established the Center For Marital &amp; Sexual 8 Health and the Center For Marital &amp; Sexual Health 9 continued the work in gender identity with gender 10 identity problems. 11 Q. So that would be then what you were referencing 12 in your report when you say that the Case Western 13 Reserve University Gender Identity Clinic was renamed, 14 moved to a new location and became independent of Case 15 Western, right? 16 A. That's right. 17 Q. Okay. And that change came about because of 18 some philosophical differences in the department or 19 budgetary limitations? 20 A. I don't believe it had anything to do with 21 philosophy. It had to do with budgetary problems and, I 22 mean, I'd be happy to explain it, but I think you 23 wouldn't be interested in the explanation ultimately. 24 Q. Yes, that summary is fine, thank you. And so 25 did you change the name at some point when it became</p>	<p style="text-align: right;">Page 61</p> <p>1 Q. Okay. Thank you. Are you familiar with the 2 University Hospital's LGBTQ and gender care program? 3 A. Not very much so, no. I know that there is a 4 program there. 5 Q. Okay. And you haven't ever been affiliated with 6 it though, have you? 7 A. Never. 8 Q. Okay. So you haven't evaluated or met with any 9 adult or child patient through that program? 10 A. That's right. 11 Q. And you haven't ever been asked to consult with 12 any of the psychiatrists at that program? 13 A. Never. 14 Q. And the DELR Private Gender Diversity Clinic has 15 not been affiliated with the gender care services 16 program at University Hospital, right? 17 A. Right. 18 Q. So again, I'll be referencing your report for a 19 few moments here, Dr. Levine. But again, I don't, I 20 don't think it's necessary for you to review it, but if 21 you would like to put it on your screen, let me know. 22 I'll be on Page 2, Paragraph 3. 23 A. Of my -- 24 Q. Of your expert report. 25 A. 01, Exhibit 01, okay.</p>

<p style="text-align: right;">Page 62</p> <p>1 Q. Yes, Exhibit 01.</p> <p>2 A. Would you give me the pages again.</p> <p>3 Q. Sure, Page 2, Paragraph 3, so that will be the</p> <p>4 top of Page 2, the paragraph does begin on Page 1.</p> <p>5 A. Yeah.</p> <p>6 Q. Okay. So in that paragraph your report states</p> <p>7 that, "During this era an occasional child was seen."</p> <p>8 By this era do you mean from around 1974 to 1993?</p> <p>9 A. Yes.</p> <p>10 Q. Okay. And by occasional do you mean infrequent?</p> <p>11 A. Infrequent is a good word.</p> <p>12 Q. So is it fair to say during that period your</p> <p>13 clinic did not see many children with gender dysphoria?</p> <p>14 A. It's fair to say that.</p> <p>15 Q. And in your deposition on March 30th you</p> <p>16 estimated that over the course of your career you've</p> <p>17 probably only seen regularly six prepubertal children,</p> <p>18 right?</p> <p>19 A. It's an estimate, yes.</p> <p>20 Q. And around 50 adolescents, give or take?</p> <p>21 A. Give or take an unknown number, yeah, ten, 12,</p> <p>22 five.</p> <p>23 Q. Sorry, so you --</p> <p>24 A. I've had extensive experience talking to</p> <p>25 adolescents over the course of my career, adolescents</p>	<p style="text-align: right;">Page 64</p> <p>1 and so we renamed the practice DELR. And but</p> <p>2 continuously through the Center of Marital &amp; Sexual</p> <p>3 Health and DELR we have been seeing trans teenagers,</p> <p>4 trans adults and occasionally a trans child.</p> <p>5 Q. Okay. Thank you. I'm going to introduce</p> <p>6 another exhibit here.</p> <p>7 (Exhibit 4 marked for identification.)</p> <p>8 MR. CHARLES: Well, hang on a second, I did</p> <p>9 not stamp the exhibit. Kelley, can we do that</p> <p>10 afterwards or do I need to go back and stamp it now?</p> <p>11 COURT REPORTER: We can do it afterwards.</p> <p>12 MR. CHARLES: Okay.</p> <p>13 BY MR. CHARLES:</p> <p>14 Q. Dr. Levine, you may have to refresh your screen</p> <p>15 to see this. The title of the document is, "Special</p> <p>16 programs."</p> <p>17 MR. CHARLES: And for the record, this will</p> <p>18 be labeled Exhibit SL04, but it is not yet so stamped.</p> <p>19 A. Yes.</p> <p>20 Q. Let me know when you can see that, Dr. Levine.</p> <p>21 A. I will. It's still loading.</p> <p>22 Q. Okay. Is it still loading, Dr. Levine?</p> <p>23 A. It has not appeared yet.</p> <p>24 Q. Okay.</p> <p>25 MR. DAVID: Doctor, go ahead and try to</p>
<p style="text-align: right;">Page 63</p> <p>1 with gender dysphoria.</p> <p>2 Q. And, and those without?</p> <p>3 A. Those without gender dysphoria?</p> <p>4 Q. Yes.</p> <p>5 A. Yes, I've seen adolescents without gender</p> <p>6 dysphoria.</p> <p>7 Q. And sorry, I'm just trying to understand. You,</p> <p>8 you testified in your deposition on March 30th that you</p> <p>9 had seen, again, regularly, which means at least one</p> <p>10 visit, likely more, approximately 50 adolescents, is</p> <p>11 that, again give or take, accurate from your view?</p> <p>12 A. It's an estimate, or I would say a guesstimate,</p> <p>13 G-U-E-S-S, estimate.</p> <p>14 Q. Fair enough. So backing up a little bit, Dr.</p> <p>15 Levine. I used this acronym without confirming that we</p> <p>16 had a shared understanding of what it is, the term DELR</p> <p>17 which stands for DeBalzo, Elgudin, Levine &amp; Risen, is</p> <p>18 that the name of your private practice, not yours,</p> <p>19 excuse me, the private practice where you work?</p> <p>20 A. It is.</p> <p>21 Q. Okay. And that's where you moved the Gender</p> <p>22 Identity Clinic after 1993, right?</p> <p>23 A. Well, technically speaking we moved it to the</p> <p>24 Center For Marital &amp; Sexual Health and in 2017 my</p> <p>25 partner and I sold the practice to DeBalzo and Elgudin,</p>	<p style="text-align: right;">Page 65</p> <p>1 refresh your browser, the page again.</p> <p>2 THE WITNESS: Okay.</p> <p>3 A. Okay, now it is here.</p> <p>4 Q. Okay.</p> <p>5 MR. CHARLES: So for the record, I'm</p> <p>6 showing Dr. Levine what will be marked Exhibit 4.</p> <p>7 Q. Dr. Levine, I'll represent to you this is a</p> <p>8 printout from a page of the DELR Website. Have you seen</p> <p>9 this material before?</p> <p>10 A. I didn't write it, it probably wasn't passed</p> <p>11 through my purview, so I'm not sure I ever saw it</p> <p>12 before. But, you know, I'd be happy to read it with</p> <p>13 you.</p> <p>14 Q. Okay. Why don't you take a look at the gender</p> <p>15 diversity program section, it's the second paragraph on</p> <p>16 that page. Do you see that paragraph there?</p> <p>17 A. Yes, I do. I'm reading it.</p> <p>18 Q. Oh, yes, please, go ahead.</p> <p>19 A. I'm finished.</p> <p>20 Q. Okay. Thank you. So even though you did not</p> <p>21 draft this, or as you say, Dr. Levine, it didn't pass</p> <p>22 through you, would you say that this is still an</p> <p>23 accurate representation of the programs and services</p> <p>24 offered at DELR where you see patients?</p> <p>25 A. Well, in a theoretical sense, yes, it's</p>



<p style="text-align: right;">Page 66</p> <p>1 accurate.</p> <p>2 Q. What do you mean theoretical?</p> <p>3 A. Well, I'm not so sure that we have a</p> <p>4 collaborative relationship with surgeons.</p> <p>5 Q. What do you mean by that?</p> <p>6 A. Well, in the, in the early days we had surgeons</p> <p>7 on our staff and we had endocrinologists and surgeons</p> <p>8 that occasionally attended our conferences. But since</p> <p>9 DELR has been in existence, we don't have anyone that we</p> <p>10 consider to be an affiliate member of our staff who's an</p> <p>11 endocrinologist, pediatric or adult, and we don't have a</p> <p>12 plastic or urologic surgeon that we regularly refer to.</p> <p>13 So when patients want to have those experiences we</p> <p>14 sometimes, you know, tell them where they might go to</p> <p>15 get an endocrinologic consultation, but they're not</p> <p>16 really members of our staff, those doctors, and surgeons</p> <p>17 seem to function independent of us.</p> <p>18 Q. I see. So going back to Exhibit 2. I'm sorry,</p> <p>19 that would actually be Exhibit 1, your report.</p> <p>20 A. I'm there, yeah.</p> <p>21 Q. Okay. Actually, never mind. Give me just a</p> <p>22 moment, I'm having an issue here on my end with an</p> <p>23 exhibit. Okay. Actually, Dr. Levine, in Paragraph 2 of</p> <p>24 your report, not Paragraph 3, you mention that you are a</p> <p>25 distinguished life fellow of the American Psychiatric</p>	<p style="text-align: right;">Page 68</p> <p>1 Q. Not private insurance?</p> <p>2 A. That's true.</p> <p>3 Q. Or Medicaid?</p> <p>4 A. Well, no one at our, our center accepts</p> <p>5 Medicaid.</p> <p>6 Q. Okay. And that includes you, right?</p> <p>7 A. Is that a question? Yes, it includes me.</p> <p>8 Q. But there was a time in your career where you</p> <p>9 accepted private insurance for your services, right?</p> <p>10 A. When I was at the University Hospitals I was on</p> <p>11 salary and, and so when I functioned as a clinician for</p> <p>12 University Hospitals I could see anybody with any kind</p> <p>13 of insurance, including Medicaid. And in fact, probably</p> <p>14 many of our early patients were Medicaid patients.</p> <p>15 Q. And that was, as you say, before -- excuse me,</p> <p>16 that was as you say between '74 and '93?</p> <p>17 A. Yes.</p> <p>18 Q. Okay. And you, you've testified before that as</p> <p>19 a general matter you think it's nice for patients to be</p> <p>20 able to use their insurance coverage for mental health</p> <p>21 care when they need it, right?</p> <p>22 A. I don't recall if I testified to that, but I</p> <p>23 think it's a nice idea, yes.</p> <p>24 Q. And do you still think it's good that not</p> <p>25 affluent people or not wealthy people can access mental</p>
<p style="text-align: right;">Page 67</p> <p>1 Association and you explained last September that that</p> <p>2 is a, a distinction, and I'm paraphrasing here, but</p> <p>3 that's a distinction that they give most clinicians if</p> <p>4 they are practicing long enough and they're still alive,</p> <p>5 is that, is that how you described that?</p> <p>6 A. Well, I don't have that in front of me, but I,</p> <p>7 that's my cynical view about this. I, I think the</p> <p>8 primary qualification is that you have never been</p> <p>9 disgraced and that you've been a member of the American</p> <p>10 Psychiatric Association for a large number of years, and</p> <p>11 there may be some additional criteria that is based upon</p> <p>12 contributions to the field, but I am not aware of that</p> <p>13 at the moment. Maybe I am more distinguished, maybe,</p> <p>14 maybe, you know, maybe the word distinguished means more</p> <p>15 like you've contributed in some way to the advancement</p> <p>16 of understanding or the, or the advancement of service</p> <p>17 delivery, but I'm not sure. I just accepted the</p> <p>18 accolade, or the new title.</p> <p>19 Q. Okay. So going back to the practice at DELR.</p> <p>20 You've testified before that various staff at DELR</p> <p>21 accept a variety of kinds of insurance, is that right?</p> <p>22 A. Yes.</p> <p>23 Q. But you yourself only accept Medicare, is that</p> <p>24 right?</p> <p>25 A. That's true.</p>	<p style="text-align: right;">Page 69</p> <p>1 healthcare?</p> <p>2 A. Yes.</p> <p>3 Q. And you testified in the Klair deposition that</p> <p>4 you provided that if you provide a letter of</p> <p>5 authorization to a patient for endocrine treatment, it's</p> <p>6 nice if they can access that treatment if it might be</p> <p>7 helpful to them, right?</p> <p>8 A. Yes.</p> <p>9 Q. And if you were treating a patient and</p> <p>10 determined that they understood the risks and you and</p> <p>11 the patient agreed the treatment would be -- actually,</p> <p>12 let me back up, sorry. When you authorize medical</p> <p>13 interventions for transgender patients, Dr. Levine, you</p> <p>14 don't use the word medically necessary, right?</p> <p>15 A. I generally do not.</p> <p>16 Q. Is it correct to say that you use the word</p> <p>17 psychologically beneficial?</p> <p>18 A. Yes, it may be psychologically beneficial.</p> <p>19 Q. Okay. So if you were treating a patient and</p> <p>20 determined, as I said before, that the patient</p> <p>21 understood the risks and you thought the treatment would</p> <p>22 be psychologically beneficial, you would want the</p> <p>23 patient to then be able to access that care, right?</p> <p>24 A. Did you ask me this question expecting a yes or</p> <p>25 no answer?</p>

<p style="text-align: right;">Page 70</p> <p>1 Q. Let me ask the question again. If you were 2 treating a patient and determined that they understood 3 the risks and you thought the treatment would be 4 psychologically beneficial and you provided letters of 5 authorization to them, you would want the patient then 6 to be able to access the care, right?</p> <p>7 A. If after getting the letter of authorization the 8 patient still wanted to do it, then I had already said 9 to the endocrinologist or the surgeon it's okay with me 10 to go ahead, that I've done my due diligence in this 11 case.</p> <p>12 But the reason I'm hesitating, Mr. Charles, is 13 that I've had several experiences, more than several, 14 where I write a letter of recommendation for a desired 15 treatment and then the patient does not follow through 16 as a reflection of ambivalence about what they're doing. 17 So I don't want to say that if I wrote a letter of 18 recommendation for a particular treatment that I would 19 want him to have it. I would say that if the patient 20 still wants to after they have the go-ahead from me 21 who's worked with the patient for a long time, then they 22 may go ahead and do it and they have my blessing. But I 23 am aware of the ambivalence that people have that 24 manifest itself only after they're on the verge of 25 getting what they say they want, and so that's why I</p>	<p style="text-align: right;">Page 72</p> <p>1 A. You know, you use the word given the 2 hypothetical. If I give you, if I grant you that 3 hypothetical, you need to grant me the hypothetical that 4 even people who present themselves as having no 5 ambivalence have ambivalence. And so --</p> <p>6 Q. Dr. Levine, I'm, I'm asking, I'm asking the 7 questions, right, and you are answering them in the form 8 that I have provided. So I understand if you don't 9 understand my question, I'm happy to rephrase it, but if 10 your objection is that you would have asked a different 11 question, that is not what is happening today.</p> <p>12 A. Okay. I appreciate that. Thank you for the 13 instruction. So the answer to your question is not, is 14 that I would not strongly want the person to have that. 15 I have already done my work, I've already written my 16 letter, I've explained the patient's circumstances as 17 far as I understand them to the endocrinologist or to 18 the surgeon, and then what happens is determined by the 19 patient and is, is determined by the doctor, the, you 20 know, the consultant or the endocrinologist or the 21 surgeon.</p> <p>22 It's, I think I'm hesitating because you want me 23 to say I want this to happen and I'm much more sanguine 24 about that, I've done what I think is my ethical 25 responsibility and the rest is up to fate, the doctor</p>
<p style="text-align: right;">Page 71</p> <p>1 want to not answer your question yes or no.</p> <p>2 Q. I understand. And I, embedded in my question 3 and what I can state explicitly is let's talk about the 4 patient who, as you say, does not have that ambivalence, 5 that as you said, you would give your blessing or you 6 have authorized it?</p> <p>7 A. Is that a question?</p> <p>8 Q. Yes.</p> <p>9 A. Well, No. 1, theoretically I think any 10 reasonable human being would have ambivalence about 11 changing their body, and so.</p> <p>12 Q. Dr. Levine, sorry, I don't think you're 13 understanding my question. Let me, let me restate it 14 for you.</p> <p>15 A. Yes, okay.</p> <p>16 Q. So I, I appreciate what you've described the 17 nuance, but I, that's not my question. The question is, 18 you've provided the letter of authorization, you're not 19 working with the patient who has ambivalence or who has 20 changed direction or changed course rather in their 21 desires, but rather a patient who has said yes, this is 22 right for me. Given that hypothetical, you would then 23 want the patient to be able to access that care provided 24 there's not any of that ambivalence?</p> <p>25 MR. DAVID: Objection to the form.</p>	<p style="text-align: right;">Page 73</p> <p>1 and the patient.</p> <p>2 Q. Okay. Thank you for that explanation. What if 3 the only way that a patient could access that care was 4 through a state sponsored healthcare plan like Medicaid?</p> <p>5 A. Actually, I don't understand the question.</p> <p>6 Q. So would your, would your, if the patient before 7 you, again, you've, you've done your ethical 8 responsibility, you're sanguine about the, you know, 9 about your wish for them to access the treatment, but 10 what if the only way that patient could access the 11 treatment were through a state Medicaid program?</p> <p>12 MR. DAVID: Objection to form.</p> <p>13 Q. That is to say, what if the patient could not 14 access the care which you authorized and which they 15 still wanted, they could only access it through 16 Medicaid, they could not pay out of pocket, they didn't 17 have private insurance through an employer, their only 18 means to access it was through Medicaid, a state 19 Medicaid program?</p> <p>20 A. Well, that would very much get to the point 21 whether science has already established that, that this 22 treatment is, is, will be beneficial both in the 23 short-run and in the long-run for the patient. I 24 actually don't feel like I have the credentials to 25 determine what states should do or insurance companies</p>

<p style="text-align: right;">Page 74</p> <p>1 should do about the whole problem of insuring people  2 with this condition, I think it's beyond my expertise.  3 Given my medical knowledge and given my, what I  4 would like to say my knowledge of the literature, given  5 my knowledge of the patient, I recognize that there are  6 lots of possibilities and I think it would be a shame  7 for some people not to have access to that care and I  8 think even though it's a shame, it poses new  9 developmental challenges for the patient which they may,  10 may very well rise to the occasion and find some other  11 solution to their dilemma.  12 Q. Okay. So, so you're not offering an expert  13 opinion about what insurance should or should not cover  14 here?  15 A. Yeah, I believe that that's the policy level  16 done at government level and insurance company level  17 having to do with all sorts of decisions that no doctor,  18 including Dr. Levine, has adequate background  19 information to make that determination.  20 Q. But generally would it be fair to say you want  21 what is best for your patients?  22 A. Yes, I do.  23 Q. Even if they're not wealthy or affluent, right?  24 A. Even if they're not wealthy or affluent or  25 insurance covered.</p>	<p style="text-align: right;">Page 76</p> <p>1 your supervision?  2 A. Yes.  3 Q. Okay. So would you, are they paying you an  4 hourly rate for the supervision?  5 A. Yes.  6 Q. Okay. But they are already licensed clinicians  7 themselves?  8 A. Yes.  9 Q. Okay. And you also said earlier today that --  10 well, let me back up. You still see individual patients  11 yourself separate and apart from your supervisory  12 duties?  13 A. Yes.  14 Q. When we spoke in September of 2021 you said that  15 in the last year you had seen zero patients under age 11  16 for gender identity issues. Is that still accurate now  17 seven months later?  18 A. I just note that you said when we spoke, you and  19 I have never spoken before, I think you must be making  20 reference to something I said in a previous report.  21 Q. Oh, okay. So let me just, I'm going to  22 introduce another exhibit, Dr. Levine, just a moment.  23 (Exhibit 5 marked for identification.)  24 Q. Okay. I've marked Exhibit 5, that would be SL5.  25 I think you may need to refresh the document window.</p>
<p style="text-align: right;">Page 75</p> <p>1 Q. Okay. And you said earlier today, Dr. Levine,  2 that as a part of your practice, your private practice  3 you supervise other staff members and clinicians, right?  4 A. I have stated that.  5 Q. If you had to estimate, how many staff members  6 do you supervise?  7 A. Well, right now I supervise two people who  8 aren't on my staff who, who come to me for supervision,  9 and I would say I supervise everyone on my staff, and my  10 staff varies from month-to-month between probably 12 and  11 13 people.  12 Q. Okay. The, the two people who aren't a part of  13 your staff, are those residents?  14 A. No, they're, one is a child, a 60-year-old child  15 adolescent psychologist who lives in New York and  16 another is a local marriage and, LPC, a licensed  17 professional counselor.  18 Q. And just, just to understand the, the  19 supervisory, the nature of that supervisory  20 relationship, are they, are they completing hours for  21 some kind of credential with you?  22 A. No.  23 Q. Are they --  24 A. Sorry, I interrupted you.  25 Q. That's okay. Are they, are they paying you for</p>	<p style="text-align: right;">Page 77</p> <p>1 A. I got it.  2 Q. Oh, you can see it?  3 A. I got it now.  4 MR. CHARLES: So for the record, this is  5 Exhibit SL05, deposition of Stephen B. Levine on  6 September 10th, 2021 in the matter of Kadel, et al. vs.  7 Folwell.  8 Q. And you, you said earlier today, Dr. Levine, you  9 remember giving this deposition last year?  10 A. I did, I do.  11 Q. Okay. And if you'll just scroll to Page 2  12 there. Actually, no, that's okay, Doctor, just leave it  13 open for a minute for me, if you would. The page  14 numbers on this document are in the upper right-hand  15 corner.  16 A. I see.  17 Q. Okay. So if you could please scroll to Page 51.  18 A. Getting close, 50, 51, I'm there.  19 Q. Okay. So then down at line 14, it's about  20 halfway down the page, do you see that? The page, I'm  21 sorry, the line numbers are on the left-hand side of the  22 page.  23 A. I see it.  24 Q. Okay. So the question was, "And using that same  25 framing of regular, how many children, so under age 11?</p>



<p style="text-align: right;">Page 78</p> <p>1 Answer, in the last year? Question, yes, yes, in the  2 last year. Answer, zero." So I just wanted to refresh  3 your recollection of your testimony there and ask, have  4 you seen, like has that number changed in the last seven  5 months since you provided this testimony?  6 A. No.  7 Q. Okay. Let's see. And then on that same page,  8 Dr. Levine, at line 19, it begins, "How many  9 adolescents," do you see that?  10 A. Yes.  11 Q. Okay. It says, "How many adolescents in regular  12 treatment for gender dysphoria would you approximate  13 you've seen in the last five years individually,  14 exclusive of your supervision of other clinicians?" At  15 line 24, "Answer, if you ask me the question in the last  16 year, I would have told you five or six, but since  17 you've asked it as a five-year period, I'm at a loss to  18 tell you whether it's 12 or 15." That's on the top of  19 Page 52, do you see that, Dr. Levine?  20 A. I see it.  21 Q. Okay. So then has that -- so let me start  22 first, in September of '21 you said in the last year you  23 had seen about five or six adolescents, would that, has  24 that number changed in the last seven months?  25 A. A little bit, yeah.</p>	<p style="text-align: right;">Page 80</p> <p>1 treatment besides psychotherapy for the treatment of  2 gender dysphoria? Answer, yes. Question, what kind of  3 treatment have you referred them for? Answer, endocrine  4 treatment." Any of the additional patients that you've  5 seen since September of '21, Dr. Levine, have you  6 authorized endocrine treatment for any of those new  7 patients?  8 A. I don't think personally, no.  9 Q. Okay. And generally speaking you testified that  10 in the last 12 or so years you've seen more adolescents  11 than you did in the, in the prior years, right?  12 A. Yes.  13 Q. And have you to your recollection, and I'm  14 talking about the whole 48, almost 50 years of your  15 clinical practice, have you provided a letter of  16 authorization for surgery for, for an adolescent? And I  17 can clarify what I mean by adolescent if that would be  18 helpful.  19 A. It would be helpful if you classified, or  20 clarified what you mean by surgery too.  21 Q. Sure. So have you provided a letter of  22 authorization for a double mastectomy for an adolescent?  23 A. I think many years ago the answer is yes. It  24 was, what comes to mind as, as you, as we speak is a 16  25 or 17-year-old girl who had macromastia and gender</p>
<p style="text-align: right;">Page 79</p> <p>1 Q. And can you just tell me what you mean by a  2 little bit?  3 A. Probably, well, it's a little uncertain because  4 sometimes parents come to see me and tell me about their  5 child. And, for example, in the winter parents told me  6 about their child and they scheduled me to see their  7 child next week. Oh, I'm sorry, that's not true, they  8 scheduled to have a follow-up appointment with me next  9 week. I've seen I think two additional teenagers, new  10 teenagers since September the 10th. But I need to tell  11 you that these kind of questions can't be answered by me  12 with any kind of certainty. I mean, I'm certain I  13 haven't seen 25 kids since that time, but whether I seen  14 two or three or four, I'm not really certain. This is  15 not the kind of thing I keep track of.  16 Q. I understand. Thank you for, for the estimate.  17 If you will scroll on that same document, Dr. Levine, to  18 Page 54.  19 A. I'm here.  20 Q. Actually, will you go back to Page 53. Are you  21 there?  22 A. Yes.  23 Q. Okay. And so at the top of Page 53, line 2, the  24 question was, "What kind of treatment have you referred  25 any of these adolescent patients for, additional</p>	<p style="text-align: right;">Page 81</p> <p>1 dysphoria and the consideration was that in her desire  2 to pass given the size of her breast tissue that we  3 thought that surgery would be a requirement for her to  4 actually live. And that was a reversal of the thinking  5 in those days that first people should live in the  6 gender role that they aspire to or that they felt that  7 they belonged to before any, anything like surgery  8 should happen, but this was a very special case based  9 upon her unique anatomy. And I think probably this is  10 30 years ago I think we wrote a letter for breast  11 removal.  12 Q. Okay. So was this, was this person a trans male  13 identified person, a trans boy?  14 A. Yes.  15 Q. Okay. So let's go back to Page 51, and Page 51  16 at line 6, just let me know when you're there.  17 A. I'm there.  18 Q. Okay. Starting at line 6, "I'm thinking about  19 the last year, approximately how many adult patients did  20 you see? And let's use your framing of 'regular,' so  21 that could be one, for one follow-up visit, or that  22 could be for more, how many adult patients did you see  23 for treatment of gender dysphoria? Answer,  24 approximately six." So my question is, Dr. Levine,  25 since September 10th, '21 have you seen additional adult</p>

<p style="text-align: right;">Page 82</p> <p>1 patients for treatment of gender dysphoria?</p> <p>2 A. Personally seeing as opposed to supervised?</p> <p>3 Q. Yes, thank you.</p> <p>4 A. Yeah. I have seen, I guess an 18-year-old would</p> <p>5 not be an adult by your definition, right?</p> <p>6 Q. Not necessarily. Would you define an</p> <p>7 18-year-old as an adult?</p> <p>8 A. Well, the 18-year old himself describes himself</p> <p>9 as an adult.</p> <p>10 Q. Okay.</p> <p>11 A. But he's an adult for certain purposes. Again,</p> <p>12 these are, these are very difficult questions for me to</p> <p>13 answer with any degree of certainty. It seems to me I</p> <p>14 must have seen an adult or two, you know, I have adult</p> <p>15 patients who come to see me periodically, and whether</p> <p>16 they have come periodically since September the 10th, I,</p> <p>17 I can't recall.</p> <p>18 Q. Okay. I understand the, I understand your</p> <p>19 explanation that this is an imprecise science for you,</p> <p>20 but just to the best of your recollection, let me narrow</p> <p>21 my question to say these would be new adult patients,</p> <p>22 so, you know, beyond the five or six that you are</p> <p>23 regularly seeing in September of '21 in the previous</p> <p>24 year.</p> <p>25 A. I would say that the adult patients that I have</p>	<p style="text-align: right;">Page 84</p> <p>1 A. Page 51.</p> <p>2 Q. Okay. Can you please scroll to Page 55.</p> <p>3 A. I'm there.</p> <p>4 Q. Okay. So at line 13 on Page 55, "Question,</p> <p>5 okay, and I'm sorry, just by recent, when was the last</p> <p>6 time you wrote a letter of authorization for a gender</p> <p>7 affirming surgery for an adult? Answer, probably</p> <p>8 12 months ago." So have you written a letter of</p> <p>9 authorization for a gender affirming surgery in the last</p> <p>10 seven months, Dr. Levine?</p> <p>11 A. I think the last letter -- you, I need to, I</p> <p>12 need to help you qualify your question. I have in the</p> <p>13 last seven months given my, my approval to several</p> <p>14 letters for bilateral mastectomies for members in Mass</p> <p>15 at Framingham, the correctional institution in</p> <p>16 Massachusetts. I don't know if that would number two or</p> <p>17 three, but since September the 10th I believe at least</p> <p>18 two and possibly three letters. I haven't personally</p> <p>19 written the letter, but I am the consultant to a group</p> <p>20 of team that approves such surgeries, and so the answer</p> <p>21 to the question is yes.</p> <p>22 Q. Okay. Thank you. And to your recollection,</p> <p>23 any, any such letter outside the, outside of that</p> <p>24 context?</p> <p>25 A. Since September the 10th?</p>
<p style="text-align: right;">Page 83</p> <p>1 seen since September 10th have been primarily through my</p> <p>2 staff and that is through presentation.</p> <p>3 Q. Okay.</p> <p>4 A. But I can't recall any brand-new person over 21</p> <p>5 who has come to see me personally about a trans matter</p> <p>6 at the moment, and I could be wrong.</p> <p>7 Q. Okay. Dr. Levine, we've been going about an</p> <p>8 hour, would you like to take a break or are you okay to</p> <p>9 continue?</p> <p>10 A. If you give me a one-minute break, that would be</p> <p>11 fine.</p> <p>12 Q. How about if we make it four minutes, we'll come</p> <p>13 back at 11:45.</p> <p>14 A. Okay.</p> <p>15 VIDEO TECHNICIAN: We're going off the</p> <p>16 record at 11:41 a.m.</p> <p>17 (A break was taken at 10:41 a.m.)</p> <p>18 VIDEO TECHNICIAN: This is media No. 3 of</p> <p>19 the deposition of Dr. Stephen Levine. Today is</p> <p>20 April 27th, 2022. We're going back on the record at</p> <p>21 11:47 a.m.</p> <p>22 BY MR. CHARLES:</p> <p>23 Q. Okay. So, Dr. Levine, looking again at</p> <p>24 Exhibit 5, your, the transcript of your deposition in</p> <p>25 Kadel. Do you have that on your screen as well?</p>	<p style="text-align: right;">Page 85</p> <p>1 Q. That's correct, yes.</p> <p>2 A. Yes, I think the answer is that, no, but I</p> <p>3 believe at our center someone else has written one</p> <p>4 letter for bilateral mastectomies.</p> <p>5 Q. Okay. Thank you. Dr. Levine, are you familiar</p> <p>6 with the, the exclusion for gender affirming surgical</p> <p>7 care in the West Virginia Medicaid Program that's at</p> <p>8 issue in this case?</p> <p>9 MR. DAVID: Objection to form.</p> <p>10 Q. You can answer.</p> <p>11 A. I'm vaguely familiar that surgical care is</p> <p>12 excluded currently, but endocrine care is not excluded.</p> <p>13 Q. Have you reviewed any documents that, that show</p> <p>14 that exclusion or was that information just communicated</p> <p>15 to you by counsel?</p> <p>16 A. Verbally communicated.</p> <p>17 Q. Okay. And so you're aware that there are</p> <p>18 categorical exclusions, which means that the exclusions</p> <p>19 prohibit surgical care related to the treatment of</p> <p>20 gender dysphoria regardless of a West Virginia Medicaid</p> <p>21 member's need for it or appropriateness for such</p> <p>22 intervention?</p> <p>23 MR. DAVID: Objection to form.</p> <p>24 Q. Let me simplify my question.</p> <p>25 A. Thank you.</p>

<p style="text-align: right;">Page 86</p> <p>1 Q. The categorical, the exclusion does not  2 investigate or contemplate whether someone receiving  3 West Virginia Medicaid needs or is an appropriate  4 candidate for such intervention, it just prohibits it,  5 period?  6 MR. DAVID: Objection to form.  7 A. The categorical exclusion would include surgery  8 for teenagers and surgery for adults, so it would cover  9 removing the breasts or removing the scrotum of a  10 15-year-old who feels like --  11 Q. Not my question, Dr. Levine. Let me, let me  12 rephrase again. The, the West Virginia Medicaid Program  13 and the exclusion it maintains, which excludes surgical  14 care for members for whom it is appropriate, it, it just  15 excludes it, you're, you're aware it just excludes it,  16 there's no, there's no conditional considerations or any  17 investigation done into the member's health at all, it  18 just, there's no coverage for that care, you understand  19 that?  20 A. I, I --  21 MR. DAVID: Objection to form.  22 A. I think that's what categorical means, so I  23 think the answer is I understand that at the moment,  24 yes.  25 Q. Okay. But you don't view your testimony here in</p>	<p style="text-align: right;">Page 88</p> <p>1 think that public health is the issue here and so I, I  2 don't want to say I'm not an expert. I'm not an expert  3 in public health, but I do have opinions about the  4 long-term public health of people who are prematurely  5 having their bodies changed because I do think this has  6 public health implications for the future of each of  7 these, these adolescence children and young adults.  8 Q. Understood.  9 A. And adults as well.  10 Q. And you, generally speaking, don't advocate to  11 deny all forms of medical intervention to people with  12 gender dysphoria though, right?  13 A. That's right.  14 Q. Okay. I'm going to introduce another exhibit,  15 Dr. Levine, give me just a moment.  16 (Exhibit 6 marked for identification.)  17 Q. Okay. It should be now or shortly visible, you  18 might need to refresh.  19 A. I now have Exhibit 6 here.  20 Q. Okay.  21 MR. CHARLES: So I'm showing Dr. Levine  22 what has been marked as SL06.  23 Q. Dr. Levine, this is a short document, please  24 just take a minute and scroll through it.  25 A. Okay, I, I've scrolled.</p>
<p style="text-align: right;">Page 87</p> <p>1 your expert report as being in support of that exclusion  2 or whether it should exist, right?  3 A. Yeah, it's my understanding that, that the  4 lawyers who hired me wanted me to testify to the state  5 of science in this field, and, and so I have not been  6 involved with the legal questions, per se, or giving an  7 opinion about those matters. As I sort of indicated to  8 you before, I don't really feel that the, my expertise  9 extends to how the insurance industry works and how  10 governments and legislatures works and so forth. So I,  11 I think the answer to the question is that I'm not  12 considering myself to be expert on the question that  13 you're asking me.  14 Q. Right. So you're, you, you are an expert about  15 what your testimony is about though, right, and you're  16 saying your testimony is not about whether or not that  17 exclusion should exist?  18 A. Yes, I'm not offering an opinion about pro or  19 con about that question.  20 Q. I see. Because you're, you're, as you say,  21 you're not a politician or a law maker?  22 A. Or an insurance expert.  23 Q. Right. Or a public health expert, right?  24 A. Well, I'm a little more ambivalent about public  25 health matters, yeah. I'm not as, I'm not, I really</p>	<p style="text-align: right;">Page 89</p> <p>1 Q. Okay. So I'm representing to you, Dr. Levine,  2 this is a printout from the Case Western Reserve  3 University Website which discusses various resources and  4 services available to transgender staff, students and  5 employees. Do you recall reviewing this material before  6 either in this form or perhaps on the Internet?  7 A. I've never seen this before.  8 Q. Okay. So if you'll scroll to the second page,  9 it's not numbered, but it, it's the second page if you  10 scroll there.  11 A. Yes.  12 Q. And the title in the middle of the document  13 there, "Transgender healthcare benefits for students and  14 transgender health benefits for employees." Were you  15 aware that Case Western University offers insurance  16 coverage for gender affirming care including  17 psychotherapy, hormone therapy and gender affirming  18 surgery for students and employees?  19 A. I wasn't specifically aware, no.  20 Q. Okay. Okay. So turning back to this case  21 specifically, Dr. Levine. Have you met with any  22 plaintiffs in this case?  23 A. No.  24 Q. Have you interviewed any of the plaintiffs?  25 A. No.</p>

<p style="text-align: right;">Page 90</p> <p>1 Q. And are you offering any opinions about the</p> <p>2 plaintiffs in this case?</p> <p>3 A. No.</p> <p>4 Q. Okay. Let's go back to your report, Dr. Levine,</p> <p>5 Exhibit 2 I believe.</p> <p>6 MR. DAVID: I think it's 1, Carl.</p> <p>7 MR. CHARLES: Oh, thank you, Caleb.</p> <p>8 Q. Exhibit 1.</p> <p>9 A. I am there.</p> <p>10 Q. Okay. So if you would scroll to Page 11.</p> <p>11 A. Okay.</p> <p>12 Q. Okay. So Page 11 beginning at Paragraph 17, you</p> <p>13 write that Dr. Karasic states, "Aside from external</p> <p>14 genital characteristics, chromosomes and endogenous</p> <p>15 hormones, other factors related to sex include...gender</p> <p>16 identity and variations in brain structure and</p> <p>17 function," do you see that sentence?</p> <p>18 A. Yes.</p> <p>19 Q. Okay. So do you disagree that gender identity</p> <p>20 is related to sex at all?</p> <p>21 A. No, I don't disagree because you said the word,</p> <p>22 the words at all.</p> <p>23 Q. So you disagree that gender identity is related</p> <p>24 to sex?</p> <p>25 A. Well, of course it's related to sex. We're here</p>	<p style="text-align: right;">Page 92</p> <p>1 care do not make anyone into a "complete woman" despite</p> <p>2 their ability to pass better as and they're aspired to</p> <p>3 according to their gender identity. How that relates to</p> <p>4 categorical exclusion or categorical inclusion is really</p> <p>5 a complex matter with many intervening variables to be</p> <p>6 considered. So that's my, that's my answer to your</p> <p>7 question.</p> <p>8 Q. Okay. I appreciate that. So but the, the, I</p> <p>9 just want to get some clarity here, and I understand the</p> <p>10 nuance that you're discussing, but that, that view that,</p> <p>11 one, you know, patients can't become a "complete man" or</p> <p>12 "complete woman," that's not, you're not saying that's a</p> <p>13 basis upon which to categorically deny hormone or</p> <p>14 surgical interventions?</p> <p>15 MR. DAVID: Objection to form.</p> <p>16 A. I think I've already answered that question. If</p> <p>17 a person wants to become, thinks they're going to become</p> <p>18 a complete man or a complete woman because they've had</p> <p>19 genital or breast surgery or some other form of surgery</p> <p>20 and then they discover that they can't be a complete man</p> <p>21 or a complete woman and in fact that they were wrong</p> <p>22 about their initial aspirations and, and that they've</p> <p>23 been misled perhaps in that belief by their affirmative</p> <p>24 therapist and doctors, then that may predispose them to</p> <p>25 be gravely disappointed. And as --</p>
<p style="text-align: right;">Page 91</p> <p>1 because the sex of a person and the gender identity of a</p> <p>2 person do not match, and so there's that relationship,</p> <p>3 it either matches extensively, it matches partially, or</p> <p>4 it matches not at all, so it's related to sex. We can't</p> <p>5 understand gender and we can't understand any of these</p> <p>6 cases with, assuming they're unrelated.</p> <p>7 Q. Okay.</p> <p>8 A. Dr. Karasic -- if I may go on.</p> <p>9 Q. No, that's fine, I'm looking at the next section</p> <p>10 here. So continuing on Page 11 at Paragraph 18, about</p> <p>11 four lines up from the bottom of the page, do you see</p> <p>12 that the sentence begins, "Contrary to"?</p> <p>13 A. Yes.</p> <p>14 Q. "Contrary to the assertions of certain members</p> <p>15 of the medical community, the aspirations of some trans</p> <p>16 individuals to become 'a complete man' or 'a complete</p> <p>17 woman' is not biologically attainable." Is your view on</p> <p>18 that a reason to categorically ban surgical care for</p> <p>19 patients who give informed consent?</p> <p>20 MR. DAVID: Object to form.</p> <p>21 A. The statement is true that I made. Whether,</p> <p>22 whether it's a reason for categorical banning surgical</p> <p>23 care is a leap. Factually and clinically and</p> <p>24 subjectively from patients it's very clear that, that</p> <p>25 all the complete surgical care, hormones and surgical</p>	<p style="text-align: right;">Page 93</p> <p>1 Q. Sorry, Dr. Levine, it sounds like you're not</p> <p>2 understanding what I'm asking, so let me, let me</p> <p>3 rephrase the question here. You're saying in your</p> <p>4 report that the fact that someone cannot become a</p> <p>5 complete man or woman, I'm sorry, that that is not</p> <p>6 biologically attainable. So my question to you is, is</p> <p>7 that fact, accepting that what you're say is facts for</p> <p>8 the purposes of our conversation, are you saying that's</p> <p>9 a reason to deny surgical interventions to people who</p> <p>10 give consent, continue to want them, give authorization</p> <p>11 to do so?</p> <p>12 MR. DAVID: Objection to form.</p> <p>13 A. What I'm saying is that it is an idea that needs</p> <p>14 to be considered between the therapists and the doctor,</p> <p>15 or and the patient. It is an idea to be considered by</p> <p>16 the endocrinologist and by the surgeon, you see what the</p> <p>17 patient believes is going to happen as a result of this.</p> <p>18 And if there are beliefs that are not materially correct</p> <p>19 and cannot biologically be correct and therefore cannot</p> <p>20 be psychologically correct, then it gives pause to the</p> <p>21 idea that we should go ahead, full speed ahead affirming</p> <p>22 and, and providing therapy, various forms of therapy</p> <p>23 without understanding the implications of what we are</p> <p>24 doing for the person's long-term health and happiness.</p> <p>25 And, and so these nuances, as you refer to them,</p>

<p style="text-align: right;">Page 94</p> <p>1 are not simply nuances to me. They are the, the devil 2 is in the details and the details here have to do with 3 the nuances. And so when I say that one cannot be 4 biologically a complete man or a woman as a result of 5 all the best surgeries that we can do, that medical, the 6 surgery has capacities to perform, that, that, that is a 7 reason to pause and to be thoughtful.</p> <p>8 And so I don't really want to answer your 9 question yes or no because I am responsible for the 10 nuances, I am a psychiatrist and, and I deal with the 11 nuances of people's lives and the determination of their 12 happiness and their, their post-operative depression and 13 their post-operative suicide attempts and so forth, so.</p> <p>14 Q. Okay. Dr. Levine, I appreciate that. Again, 15 so, so your, let's say all of those players consider 16 that idea in the way you suggest, that's, you're not 17 suggesting that that is a reason to ban all access to 18 this care?</p> <p>19 MR. DAVID: Object to form.</p> <p>20 A. I am not, I am not -- I guess I just don't know 21 how to answer your question.</p> <p>22 Q. Okay. Because you take a nuanced view, you 23 wouldn't support a complete and total ban on surgical 24 interventions, right?</p> <p>25 MR. DAVID: Objection to form.</p>	<p style="text-align: right;">Page 96</p> <p>1 you're saying here, Dr. Levine, because you, you're 2 talking about biological sex in the previous few 3 sentences, and then in that sentence I just read you 4 said it's possible for people to pass as the opposite 5 gender. So I'm just, it seems like you're conflating 6 sex and gender yourself, so I'm just trying to 7 understand what you meant by that.</p> <p>8 A. Well, I, I think you don't understand. I 9 perhaps don't understand you and you don't in this 10 instance understand me. What I'm saying is that sex is 11 a reality based upon fundamental biologic matters. 12 Gender is something that the expression of one's 13 subjective gender can be changed with the help of 14 careful grooming and hormones and surgeries, but those 15 changes do not eradicate all the presence and the 16 implications of the original biologic sex.</p> <p>17 So I'm not conflating sex and gender, I'm saying 18 that sex is a fundamental characteristic of human beings 19 and gender is a fundamental characteristic of human 20 beings, and those people who are incongruent between 21 their, their anatomy and physiology and their gender 22 identity have a certain considerable ongoing matter to 23 deal with, and but I can and so can you separate the 24 biologic sex from their gender identity, their current 25 and evolving gender identity, they're separate and but</p>
<p style="text-align: right;">Page 95</p> <p>1 A. A, a complete categorical surgical ban has to do 2 with policymakers at the level of government and, and 3 the insurance industry as they recognize what is known 4 and what is not known. It is not for me to make that 5 decision. It is for me to talk about what I know about 6 the life course of people and the subject of experiences 7 of people, that's what I know, that's where my clinical 8 expertise lies, it is not in answering questions like 9 you've just asked me.</p> <p>10 Q. So further down in that paragraph after the very 11 next sentence in the report it says, "It is possible for 12 some individuals to 'pass' unnoticed as the opposite 13 gender that they aspire to be, but with limitations, 14 costs and risks." Aren't you saying that people should 15 not conflate sex and gender?</p> <p>16 A. I'm saying that the biological sex of an 17 individual has implications for every day and every 18 stage of their life and that if we can help people to 19 pass in their, according to their current gender 20 identity, it doesn't change, it doesn't change certain 21 biologic facts, you see.</p> <p>22 Q. Okay.</p> <p>23 A. And so I don't, I don't think I can be more 24 clear than that.</p> <p>25 Q. Well, I'm, I'm just trying to understand what</p>	<p style="text-align: right;">Page 97</p> <p>1 related phenomenon.</p> <p>2 Q. Okay. Thank you. All right. I'm introducing 3 another exhibit here, but it did not get a stamp on it. 4 It should be Exhibit 7.</p> <p>5 (Exhibit 7 marked for identification.)</p> <p>6 Q. Just let me know when you can see that.</p> <p>7 A. Okay, I just pulled it up, "Considering sex is a 8 biologic variable."</p> <p>9 Q. So you cite this in the same paragraph of your 10 report discussing -- actually, sorry, you cite that in 11 Paragraph 17. So the, the second sentence of 12 Paragraph 17 reads, "This directly contradicts a recent 13 scientific statement by the Endocrine Society, which 14 implores researchers to not conflate biological sex 15 which is binary and straightforward in over 99 percent 16 of the cases with a competent gender identity which can 17 indeed represent a wide spectrum." And then, like I 18 said, you cite to this article, "Considering sex is a 19 biological variable." Have you, I'm assuming, Dr. 20 Levine, have you read this article before?</p> <p>21 A. I read this article several months ago.</p> <p>22 Q. Okay. So if you'll scroll on the bottom of the 23 first page, the title there is, "Abstract"?</p> <p>24 A. Yes.</p> <p>25 Q. Can you point to me where gender identity, where</p>



<p style="text-align: right;">Page 98</p> <p>1 the phrase gender identity appears in this abstract?</p> <p>2 A. Well, there's a term gender, but you said gender</p> <p>3 identity, right?</p> <p>4 Q. Yes, that's correct.</p> <p>5 A. I don't think the phrase gender identity appears</p> <p>6 through my quick cursory glance of the abstract.</p> <p>7 Q. Okay. And are you aware that the word binary</p> <p>8 does not appear anywhere in this article?</p> <p>9 A. If I don't --</p> <p>10 Q. I'll represent, I'll represent to you that it</p> <p>11 doesn't.</p> <p>12 A. All right. Well, I, I would trust your</p> <p>13 representation.</p> <p>14 Q. Okay. And I'll represent to you the word</p> <p>15 conflate appears no times in this article as well.</p> <p>16 A. I don't know.</p> <p>17 Q. If you could scroll to Page 221, the page</p> <p>18 numbers are in the upper right-hand corner.</p> <p>19 A. I'm there.</p> <p>20 Q. Okay. And in the paragraph that is also in the</p> <p>21 upper right-hand corner, I'm just going to read that</p> <p>22 first sentence, "A simple biological definition of male</p> <p>23 and female satisfactory to all people is elusive," do</p> <p>24 you see that?</p> <p>25 A. Yes.</p>	<p style="text-align: right;">Page 100</p> <p>1 transgender people should not be stigmatized, right?</p> <p>2 A. I agree.</p> <p>3 Q. And the last sentence of that paragraph says,</p> <p>4 "While these guidelines have been influential in years</p> <p>5 past, they are increasingly coming under scrutiny with a</p> <p>6 growing list of countries abandoning their use." Do you</p> <p>7 have a citation for that assertion, there's not one</p> <p>8 here?</p> <p>9 A. Well, I can provide you with many of them from</p> <p>10 Sweden, from Finland, from the UK and from France, I can</p> <p>11 provide you with articles that criticize the standards</p> <p>12 of care and --</p> <p>13 Q. That's fine, Dr. Levine. I'm just confirming,</p> <p>14 they're, they're not listed here, right?</p> <p>15 A. I'm sorry, they probably made the, I'm sure I</p> <p>16 made reference to them elsewhere in this, in my report.</p> <p>17 Q. We may discuss them. I just wanted to make sure</p> <p>18 I wasn't missing something here. All right. I'm going</p> <p>19 to introduce another exhibit, if you'll give me just a</p> <p>20 moment.</p> <p>21 (Exhibit 8 marked for identification.)</p> <p>22 Q. Just let me know when you can see it.</p> <p>23 A. We're Exhibit 8 now, right?</p> <p>24 Q. Yes, Exhibit 8. Is this the, the paper that we</p> <p>25 discussed earlier today, Dr. Levine, the Open Access</p>
<p style="text-align: right;">Page 99</p> <p>1 Q. Okay. So going back to your report, Dr. Levine,</p> <p>2 on Page 11 where we were.</p> <p>3 A. Do you want me to go back, to leave this?</p> <p>4 Q. Yes, yes, go ahead and leave that.</p> <p>5 A. Great. And back to Exhibit 1?</p> <p>6 Q. That's correct, yes.</p> <p>7 A. Page 11. Okay.</p> <p>8 Q. Okay. And then actually go ahead and scroll to</p> <p>9 the next page, Page 12. And I'm looking at Paragraph 20</p> <p>10 which is in the middle of the page, do you see that?</p> <p>11 A. Yes.</p> <p>12 Q. Okay. I'm going to read from the, approximately</p> <p>13 the third sentence of that paragraph, "WPATH's core</p> <p>14 mission since its inception has been to destigmatize</p> <p>15 transgender identities and to advocate for easy access</p> <p>16 and broad insurance coverage for transgender related</p> <p>17 procedures." And let me, excuse me, let me start from</p> <p>18 the beginning of that paragraph actually to give the</p> <p>19 context, "Dr. Karasic misrepresents treatment</p> <p>20 recommendations from an advocacy organization of</p> <p>21 scientific facts. In his witness statement Dr. Karasic</p> <p>22 regards treatment recommendations issued by the advocacy</p> <p>23 organization, the World Professional Association of</p> <p>24 Transgender Health, as authoritative protocols," and</p> <p>25 then the sentence I just read follows. You agree that</p>	<p style="text-align: right;">Page 101</p> <p>1 paper?</p> <p>2 A. Yes, it's one of the two papers I mentioned that</p> <p>3 were not on the CV.</p> <p>4 Q. Okay. And this is, but this is not the one that</p> <p>5 you said SEGM provided funding for?</p> <p>6 A. That's right.</p> <p>7 Q. The title of that, can you please remind me the</p> <p>8 title of that article?</p> <p>9 A. "Reconsidering informed consent for transgender</p> <p>10 identified children, adolescents and adults."</p> <p>11 Q. Aren't there people who are not just</p> <p>12 self-identified as transgender?</p> <p>13 A. Oh, yes, all human beings have a composite of</p> <p>14 masculine and feminine identifications and some people</p> <p>15 struggle very much with the, for example, if I can only</p> <p>16 talk about males for a minute, some people struggle with</p> <p>17 the degree of feminization, feminine identities that</p> <p>18 they have and feminine, what they call feminine</p> <p>19 interests and they don't necessarily come out to a</p> <p>20 doctor and present with I'm a trans and I want this</p> <p>21 treatment or that.</p> <p>22 I get, I spend a great deal of time with adults</p> <p>23 actually in psychotherapy who presented for depression</p> <p>24 or anxiety or alcoholism and so forth and eventually</p> <p>25 when I get to know them very well they start talking</p>

<p style="text-align: right;">Page 102</p> <p>1 about their struggles about what I would call in general 2 their sexual identities. And that often focuses on 3 either their feminine identifications or their 4 homoerotic desires or their kinky interests, their 5 paraphilic interests, but these are shameful or at least 6 private matters that has taken them a long time to, to 7 broach the subject with me. 8 But they are not transgender identified, but 9 they are speaking about phenomenon that are very closely 10 akin to transgender identified people, that is they're 11 struggling internally with how to balance their 12 predilections and, and attractions to and participation 13 in stereotypic female activities. So that's the answer 14 to your question. 15 Q. Okay, okay. What I, what I also mean by that 16 question is -- let me start over. There are people who 17 just are transgender, not who self-identify as 18 transgender, right? 19 A. No. 20 Q. So if someone tells you that they are a 21 transgender, then in your view they are only 22 self-identifying as transgender? 23 A. We need to ask ourselves how people come to 24 label themselves in one way or another. And I think the 25 answer is they reflect upon that which they think and</p>	<p style="text-align: right;">Page 104</p> <p>1 Q. Okay. But you're not suggesting that those 2 people don't experience gender dysphoria? 3 A. I'm not saying that at all. 4 Q. Okay. 5 A. Well, not everyone who identifies as trans is 6 dysphoric. 7 Q. Right, but that wasn't my question. My question 8 was you're not saying those self-identified trans people 9 don't suffer from gender dysphoria? 10 A. I think you and I are at a cross, we're missing 11 each other for a moment here. 12 Q. Okay. So let's, let's move on because I think 13 you did answer it, you said no, that's not what I'm 14 saying. You're not saying self-identified trans people 15 don't suffer from gender dysphoria, so I just wanted to 16 make sure I heard you. Let's go back to your report on 17 Page 13. 18 A. You're not talking about my article, my report? 19 Q. No, you can, you can put the article to the side 20 or, or navigate away from that. 21 A. Sorry. Page 13? 22 Q. Yes. At Paragraph 22 is where I'll start 23 reading. 24 A. Wait a second, please. 25 Q. Sure.</p>
<p style="text-align: right;">Page 103</p> <p>1 feel that which they're attracted to and, and how they 2 want to, how they categorize themselves. 3 You see, the whole concept of transgender is a 4 relatively modern thing, we didn't even have the term 5 say 70 years ago or 80 years ago. We believe that human 6 beings haven't changed that much, but the available, the 7 categories of human beings have changed dramatically. 8 And so my quick answer to your previous question no 9 implies to me that everyone who says that they're just 10 transgender really are self-identifying as transgender 11 based upon where they live, what they know, what they've 12 read and what society is saying to them. 200 years ago 13 society wasn't saying to people that you could be trans, 14 you could have gender identity variations. We didn't 15 have any language for this years ago, now we have a 16 language for it. 17 So what I have said to you very quickly is that 18 everyone who says that they're just a transsexual person 19 identifies as a transsexual person. And embedded in 20 that I'm just a transsexual person are a set of ideas or 21 assumptions that they have about themselves and that 22 they are, that it has no cause other than biology, than 23 embryologic development and that they are just a trans 24 person. But that, that is, I return to my quick answer 25 to your question and that is no.</p>	<p style="text-align: right;">Page 105</p> <p>1 A. Okay, I'm there. 2 Q. Okay. "A newly revised draft of the upcoming 3 SOC 8 Version of the guidelines appears to continue to 4 suffer from a number of serious methodological problems 5 that will limit its clinical use. It is perhaps not 6 surprising that a growing number of countries are 7 deviating from WPATH and Endocrine Society guidelines 8 and are developing their own treatment guidelines that 9 prioritize psychological treatments for use. They 10 include such pioneers in gender affirming care as 11 Sweden, Finland and the UK." 12 Okay, I'm going to introduce another exhibit 13 now. 14 (Exhibit 9 marked for identification.) 15 Q. Okay. That should be up momentarily. 16 A. "One year since Finland broke." 17 Q. Mm-hmm, yes. 18 A. The trouble is that I can't really, I can't read 19 it. I see the headline, but it's really very faint. 20 But go on, please. 21 Q. If you move your -- 22 MR. CHARLES: Actually, Kelley, can we go 23 off the record for just a second. 24 VIDEO TECHNICIAN: We're going off the 25 record at 12:33 p.m.</p>

<p style="text-align: right;">Page 106</p> <p>1 (A break was taken at 11:33 a.m.)</p> <p>2 VIDEO TECHNICIAN: We're going back on the</p> <p>3 record at 12:34 p.m.</p> <p>4 MR. CHARLES: Okay. So I'm showing Dr.</p> <p>5 Levine what has been marked as SL09, an article from</p> <p>6 Society for Evidence Based Gender Medicine entitled,</p> <p>7 "One year since Finland broke with WPATH standards of</p> <p>8 care."</p> <p>9 BY MR. CHARLES:</p> <p>10 Q. Dr. Levine, do you see the date of publication</p> <p>11 in the left corner of that first page?</p> <p>12 A. July 2nd.</p> <p>13 Q. And, and the year is 2021, right?</p> <p>14 A. Yes.</p> <p>15 Q. So looking at the first paragraph there, I'm</p> <p>16 just going to read that, "A year ago the Finnish Health</p> <p>17 Authority (PALKO/COHERE) deviated from WPATH standards</p> <p>18 of care 7 by issuing new guidelines that state that</p> <p>19 psychotherapy rather than puberty blockers and cross sex</p> <p>20 hormones should be a first line treatment for gender</p> <p>21 dysphoric youth. This change occurred following a</p> <p>22 systematic evidence review which found a body of</p> <p>23 evidence for pediatric transition inconclusive."</p> <p>24 And then the next paragraph, the first sentence,</p> <p>25 "Although pediatric medical transition is still allowed</p>	<p style="text-align: right;">Page 108</p> <p>1 "The qualifying criteria for gender reassignment of</p> <p>2 youth articulated in the 2020 Finnish treatment</p> <p>3 guidelines are consistent with the original Dutch</p> <p>4 protocol, but represent a significant tightening of the</p> <p>5 more recent practices promoted by WPATH." So the</p> <p>6 article describes it as a tightening of the standards</p> <p>7 which WPATH allows for, right?</p> <p>8 A. Yes.</p> <p>9 Q. So you, you've talked about in your report an</p> <p>10 idea of rapid affirmation treatment where you allege</p> <p>11 that diagnoses of gender dysphoria are being made in an</p> <p>12 hour and then, and then prescriptions provided for</p> <p>13 medical interventions, right?</p> <p>14 A. Yes.</p> <p>15 Q. Do you have, or I should say, your evidence for</p> <p>16 that is anecdotal in nature, right?</p> <p>17 A. My evidence for that is what has been told to me</p> <p>18 by parents, what has been told to me by patients and</p> <p>19 what this, what the third paragraph of this document</p> <p>20 says.</p> <p>21 Q. Right. So --</p> <p>22 A. So I don't really think the answer is simply</p> <p>23 anecdotal, it's based upon a considerable consistent</p> <p>24 range of, of experiences, both of my personal</p> <p>25 experiences, of my patient's personal experiences, and</p>
<p style="text-align: right;">Page 107</p> <p>1 in Finland, the guidelines urge caution given the</p> <p>2 unclear nature of the benefits and the interventions,</p> <p>3 largely reserving puberty blockers and cross sex</p> <p>4 hormones for minors with early onset gender dysphoria</p> <p>5 and no co-occurring mental health conditions." Did I</p> <p>6 read that correctly?</p> <p>7 A. Yes, you did.</p> <p>8 Q. Okay. So as this article states, medical</p> <p>9 interventions are still available in Finland for youth</p> <p>10 experiencing gender dysphoria, right?</p> <p>11 A. On a case-by-case basis I think.</p> <p>12 Q. And --</p> <p>13 A. I should say on a case-by-case basis and two</p> <p>14 research centers as opposed to in any practitioner's</p> <p>15 office throughout the country.</p> <p>16 Q. Right. But it's, it's not been completely</p> <p>17 prohibited is what I'm asking?</p> <p>18 A. Oh, it's been, it's been, the brakes have been</p> <p>19 put on.</p> <p>20 Q. But it's not been completely prohibited is what</p> <p>21 I'm asking?</p> <p>22 A. That's what you and I have agreed on, yes.</p> <p>23 Q. So it's not been completely prohibited, right?</p> <p>24 A. Right.</p> <p>25 Q. So then in the third paragraph beginning with,</p>	<p style="text-align: right;">Page 109</p> <p>1 of the personal experiences of many other therapists</p> <p>2 around the world. This is not to be dismissed as Dr.</p> <p>3 Levine's idiosyncratic views.</p> <p>4 Q. I'm just trying to understand, Dr. Levine, you</p> <p>5 said you don't have scientific studies that provide this</p> <p>6 evidence, but you've heard from parents, right?</p> <p>7 A. And patients.</p> <p>8 Q. You've, you've, how many patients have you</p> <p>9 talked to who have told you --</p> <p>10 A. As we're speaking I'm speaking of one person</p> <p>11 who -- well, actually I'm speaking of two recent people</p> <p>12 I've seen who got hormones upon the first visit, one is</p> <p>13 I think a 17-year-old and one a 20-year-old.</p> <p>14 Q. Okay. But those, like I said, Doctor, that's</p> <p>15 clinical case information, that's not anything that's</p> <p>16 reflected in a peer reviewed journal or article?</p> <p>17 A. Well, if you read, if you read my, my last</p> <p>18 article, it's, it's in that peer reviewed article.</p> <p>19 Q. Dr. Levine, let me clarify. That's not, that</p> <p>20 data doesn't come from a study or a, a scientific</p> <p>21 collection of data that has been published, that's from</p> <p>22 your clinical experience?</p> <p>23 A. Yes, and that's from my experience in giving,</p> <p>24 giving a talk to 35 parents who, who complain about</p> <p>25 these things and about the phone calls I get from</p>



<p style="text-align: right;">Page 110</p> <p>1 parents about the repetitiveness with which their children</p> <p>2 are affirmed without, without any understanding of their</p> <p>3 autistic background or the problems that they've had and</p> <p>4 that their parents are hard to find anybody who isn't</p> <p>5 quickly affirming in their communities. This is not a</p> <p>6 Levine anecdotal experience of one or two cases, this</p> <p>7 has been going on everywhere.</p> <p>8 Q. Okay. But you don't have a, a citation in your</p> <p>9 report with --</p> <p>10 A. That's right. I have never seen a data bound</p> <p>11 analysis of, of what I am suggesting based upon my</p> <p>12 experience.</p> <p>13 Q. And the, the 35 parents that you gave a talk to,</p> <p>14 I think you said in the BPJ deposition you were sitting</p> <p>15 in your easy chair while you gave that talk, is that</p> <p>16 right?</p> <p>17 A. Well, I'm sitting in my easy chair as I'm</p> <p>18 talking to you at the moment.</p> <p>19 Q. Oh, okay. So you were, you were providing that,</p> <p>20 you were having that conversation virtually is what I</p> <p>21 mean to ask?</p> <p>22 A. Yes.</p> <p>23 Q. Okay.</p> <p>24 A. My legal things have been virtual as well.</p> <p>25 Q. Okay, okay. Dr. Levine --</p>	<p style="text-align: right;">Page 112</p> <p>1 (A break was taken at 12:17 p.m.)</p> <p>2 VIDEO TECHNICIAN: We're going back on the</p> <p>3 record at 1:18 p.m.</p> <p>4 BY MR. CHARLES:</p> <p>5 Q. Okay. So, Dr. Levine, we're, you were talking</p> <p>6 about WPATH standards of care and a second article, but</p> <p>7 if you could actually turn to page, turn to your report,</p> <p>8 Exhibit 1, you may have to navigate back and then</p> <p>9 refresh.</p> <p>10 A. What page on my Exhibit 1?</p> <p>11 Q. Page No. 12.</p> <p>12 A. Okay.</p> <p>13 Q. Okay. So then starting with Paragraph 21, which</p> <p>14 is at the bottom of Page 12, do you see that?</p> <p>15 A. Yes.</p> <p>16 Q. Okay. "A recently published systematic review</p> <p>17 found the current WPATH SOC 7 guidelines to be of very</p> <p>18 low quality and unfit tools for clinical decision</p> <p>19 making, noting incoherence within the recommendation."</p> <p>20 And that, that last part of that sentence continues onto</p> <p>21 Page 13, do you see that?</p> <p>22 A. Yes.</p> <p>23 Q. Okay. And for that proposition you're citing a</p> <p>24 paper by Dahlen entitled, Dahlen, et al., a number of</p> <p>25 different authors entitled, "International clinical</p>
<p style="text-align: right;">Page 111</p> <p>1 MR. CHARLES: Actually, Kelley, Kraig, can</p> <p>2 we go off the record really quick.</p> <p>3 VIDEO TECHNICIAN: One moment please.</p> <p>4 We're going off the record at 12:43 p.m.</p> <p>5 (Lunch break taken from 11:43 a.m. to</p> <p>6 12:16 p.m.)</p> <p>7 AFTERNOON SESSION</p> <p>8 VIDEO TECHNICIAN: This is media No. 4 in</p> <p>9 the deposition of Dr. Stephen Levine. Today is</p> <p>10 April 27, 2022. We're going back on the record at</p> <p>11 1:16 p.m.</p> <p>12 BY MR. CHARLES:</p> <p>13 Q. Okay. Dr. Levine, before we left for lunch we</p> <p>14 were talking about the, the WPATH standards of care and</p> <p>15 we were on Page 12 of your report, which is again</p> <p>16 Exhibit 1.</p> <p>17 A. Let me interrupt you, please. I now, I've done</p> <p>18 something to my screen and now I see all the</p> <p>19 participants, I see, I have gallery view and I need help</p> <p>20 in getting back to the exhibits.</p> <p>21 Q. Okay.</p> <p>22 MR. CHARLES: So, Kraig, can we go off the</p> <p>23 record again, please.</p> <p>24 VIDEO TECHNICIAN: Yep. One moment. We're</p> <p>25 going off the record at 1:17 p.m.</p>	<p style="text-align: right;">Page 113</p> <p>1 practice guidelines for gender/minority trans people</p> <p>2 systematic review of quality assessment," do you see</p> <p>3 that there at the bottom of 13?</p> <p>4 A. I do.</p> <p>5 Q. Okay. So let me introduce another exhibit. I'm</p> <p>6 going to introduce that Dahlen paper.</p> <p>7 (Exhibit 10 marked for identification.)</p> <p>8 A. I should go to that, right?</p> <p>9 Q. Yes. Give me just one moment, I'm adding the,</p> <p>10 the stamp right now. Okay. It should be available for</p> <p>11 you to see now.</p> <p>12 A. Yes.</p> <p>13 Q. Okay. And you've seen this, you've seen this</p> <p>14 research before, Dr. Levine?</p> <p>15 A. I have.</p> <p>16 Q. Okay.</p> <p>17 MR. CHARLES: So I'm showing for the record</p> <p>18 what has been marked as Exhibit SL10, which is a paper</p> <p>19 entitled, "International clinical practice guidelines</p> <p>20 for gender/minority trans people, systematic review and</p> <p>21 quality assessment." First author on the paper named</p> <p>22 Sara Dahlen, D-A-H-L-E-N.</p> <p>23 Q. Okay. The page numbers on this document are in</p> <p>24 the lower right-hand corner, so please scroll to Page 8.</p> <p>25 Well, I'm sorry, the page numbers appear to rotate from</p>

<p style="text-align: right;">Page 114</p> <p>1 left to right, but they are both on the, they are both  2 in the bottom corners.  3 A. Okay, I am on Page 8 now.  4 Q. Okay. So on the left-hand column there is a  5 heading that reads, "Consistency of recommendations  6 across the CPG's." And I will represent to you that CPG  7 for the purpose of this study stands for clinical  8 practice guidelines. Do you want me to scroll up and  9 show you where it says that, Dr. Levine, or are you okay  10 to agree on that?  11 A. I agree with you.  12 Q. So this paragraph here begins, I'm just going to  13 go ahead and read if you'll follow along, "Online  14 supplemental table W5 contains all extracted key  15 recommendations where these could be distinguished. It  16 shows little overlap of topic content across the CPG's,  17 many recommendations in WHO 2011 and 2016 were similar,  18 but not identical, the former being stood down after the  19 latter was published. No statements were highlighted by  20 the WPATH SOC Version 7 authors as key recommendations  21 and have proved impossible for all six reviewers  22 independently performing data extraction to identify  23 them.  24 "The total number of extracted recommendations  25 ranged between zero and 168 with little consistency or</p>	<p style="text-align: right;">Page 116</p> <p>1 assess various recommendations across a number of  2 different clinical practice guidelines for care for  3 gender minority and trans people, is that your  4 understanding?  5 A. Yes.  6 Q. Okay. Okay. So if you look at the results  7 paragraph, the last sentence says, "Consistency between  8 CPG's could not be examined due to unclear  9 recommendations within the World Professional  10 Association For Transgender Health standards of care  11 Version 7 and a lack of overlap between other CPG's."  12 So let's go back to Page 8 and the same  13 paragraph on the left-hand side, "Consistency of  14 recommendations across CPG's."  15 A. I'm there.  16 Q. Okay. So the, you see the sentence where it  17 says, it's the third sentence of that paragraph, it  18 says, "No statements were highlighted by the WPATH  19 standards of care Version 7 authors as key  20 recommendations," right. So the authors of this study  21 are offering that there were other components of CPG's  22 that were styled as key recommendations, is that right?  23 A. I'm not sure, I don't know the answer to that  24 question, I would have to look at those other  25 recommendations. I, I don't remember if, I mean, if you</p>
<p style="text-align: right;">Page 115</p> <p>1 agreement on what passages were selected. Some  2 extracted statements might have been intended as  3 recommendations or standards, but many were flexible,  4 disconnected from evidence and could not be used by  5 individuals or services to benchmark practice.  6 "After discussion of this incoherence within  7 WPATH SOC Version 7 and our inability therefore to  8 compare recommendations across all CPG's, it was decided  9 not to revisit inclusions post talk, but to abandon this  10 protocol aim."  11 So before I ask you about that, let me, let's go  12 back up to Page 1 of this study, Dr. Levine.  13 A. Okay.  14 Q. And the abstract there on the left-hand column,  15 the objectives of this study are, "To identify and  16 critically appraise published clinical practice  17 guidelines regarding healthcare of gender minority and  18 trans people." The design was that they used the agreed  19 to, which is the appraisal of guidelines for research  20 and evaluation tool, and the setting was that they used  21 six databases and six CPG Websites that they searched  22 and international key opinion leaders were also  23 approached.  24 So generally speaking, this review was a  25 systematic review in the sense that they used a tool to</p>	<p style="text-align: right;">Page 117</p> <p>1 tell me that's true, I will trust you, but I, I can't  2 say definitively you're right.  3 Q. Right. So I'm taking that from, just for your  4 reference I'm taking that from the first sentence of  5 that paragraph where it says, "Online supplemental table  6 W5 contains all extracted key recommendations where  7 these could be distinguished"?  8 A. Yes, okay.  9 Q. Okay. So I'm just saying I understand that to  10 mean that the reviewers were looking for essentially the  11 word key recommendations from all of the clinical  12 practice guidelines?  13 A. Yes.  14 Q. Okay. So your statement in your report says  15 that WPATH, excuse me, that this study noted incoherence  16 in the recommendations, but you're not suggesting that  17 this document said that WPATH is incoherent, are you,  18 you're just saying that the key recommendations didn't  19 align with the, with what the reviewer's protocol aim  20 was?  21 A. What I'm saying is that if you read this entire  22 article, you will not come away with the idea that there  23 is a great endorsement of the, of the reasonableness of  24 the scientific basis or the coherence of 121 pages of  25 text in the standards of care, that's my point.</p>

<p style="text-align: right;">Page 118</p> <p>1 There is, there is, there is a bunch of  2 pronouncements, but and what proposes, what has been  3 interpreted by the consumers of WPATH standards of care  4 as the treatment guidelines and the treatment  5 recommendations, but in fact many of those people who  6 testify or who believe that they're just following  7 WPATH's protocol, they're, they might be following a  8 sentence or two of WPATH's protocol and don't understand  9 that in another section of these 121 pages there's  10 something opposite or incomplete or hedging to that.  11 So WPATH has been greatly misunderstood and  12 these people have, Dahlen, et al., have said that in  13 investigating carefully these 121 pages there is  14 contradiction or incoherence and a failure to, even  15 though these are called standards of care, they are best  16 guidelines, clinical guidelines and they make a  17 distinction between standards of care and guidelines.  18 So, I mean, I read the Dahlen, et al. paper as  19 not an endorsement of the legitimacy and the scientific  20 validity of, of the various interpretations of the  21 standards of care. I, I think you are trying to say  22 something else, but I'm not sure what you're trying to  23 say.  24 Q. Well, what I'm, what I'm asking is, this paper  25 is not suggesting that the entire WPATH is incoherent,</p>	<p style="text-align: right;">Page 120</p> <p>1 contradictory. And, and if, if there were no key, if  2 there were no key recommendations, the discussions at  3 various times at least according to the author that I  4 spoke with about this said they didn't, they were  5 contradictory.  6 Q. Okay.  7 A. But you're talking about this paragraph and I'm  8 really not familiar enough with all ten pages of the  9 text, I would have to spend a couple hours studying this  10 in order to answer your question more definitively.  11 Q. Okay. Let's go to Page 77 of your report. I'm  12 sorry, Page 37, Paragraph 77.  13 A. I'm getting there. "The increased incidence,"  14 is that what you're talking about?  15 Q. Yes, that's the paragraph, yes. Okay. So the  16 second sentence of that paragraph reads, "As the Dahlen,  17 et al. study pointed out, standards of care throughout  18 medicine have the ethical standard that no more than  19 30 percent of the formulating," hang on, "of those  20 formulating the recommendations should earn their income  21 based on the guidelines offered. Experts in methodology  22 are required, in addition, to be clinicians. But the  23 majority of WPATH's writer group, writers group were  24 those whose income is derived from trans care. Their  25 inconsistent recommendations did not flow from</p>
<p style="text-align: right;">Page 119</p> <p>1 which I understand is what you're saying, but I'm, I'm  2 pointing out that what they said in regards to actually  3 using the word incoherence was that there were no words  4 in WPATH that said key recommendations, and that's what  5 they were looking for in, in this study, that's what  6 they described, they said they were looking for key  7 recommendations. Some CPG's had that language and some  8 didn't, and WPATH didn't, so we didn't use that as a  9 protocol that we assessed, so that's more what I'm  10 asking about.  11 MR. DAVID: Objection to form.  12 A. Mr. Charles, your level of sophistication in  13 reading this study and preparing for this deposition is  14 very different than when I read this months ago and --  15 Q. Okay. Dr. Levine, thank you. That's not what  16 I'm asking you. What I'm asking you is whether the word  17 incoherence is used, it's about that the phrase key  18 recommendations doesn't appear in WPATH and that you  19 didn't take, that you were not directly quoting  20 incoherence about WPATH more broadly, like that's not a  21 quote that appears in this study?  22 A. Well, No. 1, you just pointed to a paragraph in  23 this study and I, I don't remember what the other ten  24 pages contain actually. And my understanding of  25 incoherence was, was I think I would use the word</p>	<p style="text-align: right;">Page 121</p> <p>1 scientific evidence."  2 So looking just at the sentence of that  3 paragraph where you say that the Dahlen study pointed  4 out that standards of care throughout medicine have the  5 ethical standard that no more than 30 percent of those  6 formulating the recommendation should earn their income,  7 excuse me, based on the guidelines offered, can you  8 point me to where in this article, in the Dahlen article  9 it says that?  10 A. Not at the moment I can't.  11 Q. Okay. Well, I'm representing to you the word,  12 that that information does not appear anywhere in this  13 article.  14 A. Well, then perhaps it appears in the article  15 where, where the, where there's some reference to what,  16 what are the standards of people who should be  17 evaluating treatment guidelines. I don't, right now I  18 can't, I don't recall where it came from. I'm pretty  19 sure that's correct.  20 Q. Okay. But it's not, you don't recall where it  21 is, in that article it is?  22 A. I don't recall, no.  23 Q. Okay. So let's, let's go back to your report,  24 or maybe that's where you are already, on Paragraph 77.  25 Okay. So we were talking earlier, Dr. Levine, that you</p>

<p style="text-align: right;">Page 122</p> <p>1 said other countries, I believe you said Finland,  2 Sweden, France, the UK are creating their own  3 guidelines, right?  4 A. Yes.  5 Q. Okay. But as far as you know, none of those  6 countries are completely banning all medical  7 interventions for youth and adults, right?  8 A. No, but they're setting a different set of  9 standards that are so different than the United States,  10 so different, dramatically different, so much so that,  11 that people in the United States need to pause and take  12 a deep breath and make reference to these, these  13 countries that have presented a methodologist, that have  14 given, created commissions of methodologists to look at  15 the data, you see.  16 In the United States we haven't done that, but  17 other countries that are smaller and, and who are in  18 fact one of the early adapters of the, of these  19 protocols for, for giving hormones, these people have  20 had a lot of experience and they have monitoring systems  21 about what happens to these people. And those people,  22 those countries have said wait a minute, let's not be  23 going gangbusters about this.  24 Q. Okay. So thank you for that, Dr. Levine, but  25 the, the crux of my question is those countries are not</p>	<p style="text-align: right;">Page 124</p> <p>1 would be beneficial to them. You know, there have been  2 a lot of studies, there have been studies published that  3 have failed to show the long-term benefits of these,  4 these, in Sweden, for example.  5 Q. Like you said, Dr. Levine, the, the crux of my  6 question again is whether rich or poor in these  7 countries with universal healthcare, yet these people  8 are, you know, deemed through the proper protocols to be  9 able to access this care, then they are able to access  10 it, it's not, it's not prohibited?  11 A. I agree with you.  12 Q. Okay. Let's go to Page 13 of your report,  13 please.  14 A. What paragraph?  15 Q. Paragraph 23.  16 A. Yes.  17 Q. Okay. "As the co-chair of WPATH SOC 5  18 committee, I have firsthand experience with the  19 organization and the evolution toward its current state  20 of advocacy at the expense of rigorous science. I would  21 detail my experiences in a separate section of this  22 document. My experience appears to be consistent with  23 that of the incoming president of WPATH, a transgender  24 woman and surgeon, Dr. Bowers, who recently admitted  25 that activism within WPATH has taken over science and</p>
<p style="text-align: right;">Page 123</p> <p>1 banning all medical interventions for use in adults, and  2 you said no, and so my follow-up question is, Sweden is  3 allowing access to puberty blockers and cross sex  4 hormones in clinical trials only, but they're still  5 available, right?  6 A. Right.  7 Q. Okay. And are any of these countries to your  8 knowledge banning all surgical interventions for adults?  9 A. Not to my knowledge.  10 Q. Okay. And are you saying that, are you  11 providing an expert opinion today that health insurance  12 options for indigent people in those countries do not  13 provide this care?  14 A. Those countries have universal health insurance,  15 so they don't make a distinction about indigent people.  16 Q. Okay. So then they're, presumably based on that  17 indigent people have healthcare coverage?  18 A. Rich people and indigent people have healthcare,  19 universal healthcare coverage, as far as I know, in  20 these countries.  21 Q. Okay. So that would mean regardless of whether  22 someone is indigent or disabled, it would be possible  23 for them to access these interventions?  24 A. If they qualify in a research protocol or for  25 the younger people and if clinicians felt that this</p>	<p style="text-align: right;">Page 125</p> <p>1 when I was in WPATH, any deviation from the hormonal and  2 surgical gender affirming treatment model is currently  3 not tolerated." Okay. So then, give me just a moment,  4 I have an exhibit here.  5 Actually, before I introduce this, Dr. Levine,  6 let me just finish one, I'm just going to read the rest  7 of that. Okay. So the remainder of that sentence  8 quotes at the bottom of Page 13, "There are definitely  9 people in WPATH who are trying to keep out anyone who  10 doesn't absolutely buy the party line that everything  11 should be affirming and there is no room for dissent."  12 And you cite a footnote, or I'm sorry, the citation is  13 footnote 16 which is an article by Abigail Shrier  14 entitled, "Top trans doctors blow the whistle on sloppy  15 care, October 4, 2021." Do you see that there at the  16 bottom of Page 14?  17 A. Yep.  18 Q. Okay. So then let me go back to my exhibit  19 here.  20 (Exhibit 11 marked for identification.)  21 Q. Okay. Just let me know when you can see that.  22 A. I'm looking at Page 23 now.  23 Q. Actually, I've introduced a new exhibit. So if  24 you could toggle back to either hit the back button or  25 hit refresh and you should see Exhibit SL11.</p>

<p style="text-align: right;">Page 126</p> <p>1 A. All right.</p> <p>2 Q. Just let me know when you have that.</p> <p>3 A. Yes, I see that.</p> <p>4 MR. CHARLES: So for the record, I'm</p> <p>5 showing Dr. Levine what has been marked as Exhibit SL11.</p> <p>6 Q. So are, are you aware that Dr. Bower has issued</p> <p>7 her own statement on her Website after that article you</p> <p>8 quoted was published?</p> <p>9 A. No.</p> <p>10 Q. Okay. So I'm representing to you, Dr. Levine,</p> <p>11 that this is that statement from Dr. Bower's Website.</p> <p>12 I'm going to draw your attention to a couple portions in</p> <p>13 particular. So looking at Paragraph 1, "Dear</p> <p>14 colleagues, clients and friends, regarding the 10/4/21</p> <p>15 article by Abigail Shrier, I remain disappointed by the</p> <p>16 tone and intent of the article. My comments are taken</p> <p>17 out of context and used to cast doubt upon trans care,</p> <p>18 particularly the use of puberty blockers. Worse, Jazz</p> <p>19 Jennings was disrespectfully and erroneously portrayed</p> <p>20 as a puberty blockade failure based solely upon her</p> <p>21 television portrayal.</p> <p>22 "That said, the author conveyed to me that she</p> <p>23 is not against the use of puberty blockade, but rather</p> <p>24 interested in better informed consent, a principle upon</p> <p>25 which we'd love to agree. I did believe that my</p>	<p style="text-align: right;">Page 128</p> <p>1 recognize my long-term contributions to the field, my</p> <p>2 unwavering advocacy for patients, the one-off regarding</p> <p>3 this article, wrong time, wrong venue. Although my</p> <p>4 comments are my own professional opinions, I do</p> <p>5 recognize that as president elect I now speak for WPATH</p> <p>6 as well. I've learned from this experience and will be</p> <p>7 better. I also hope that my comments will help future</p> <p>8 clinicians, families and patients make more certain</p> <p>9 informed choices. I believe that this moment will spur</p> <p>10 studies, will inspire surgeons to seek better results,</p> <p>11 and encourage families to consider a bit of puberty when</p> <p>12 weighing treatment options.</p> <p>13 "What I hope for most of all is that my out of</p> <p>14 context comments will not be excerpted to weaponize</p> <p>15 ongoing attacks upon transgender persons. We have been</p> <p>16 here since the beginning of time and will be here in the</p> <p>17 future. We must not allow the critics and skeptics to</p> <p>18 undue our legitimacy. Rather than attack one another,</p> <p>19 we are best served by our support of WPATH and its goal</p> <p>20 of establishing evidence based care that affirms gender</p> <p>21 identity as another important aspect of global</p> <p>22 diversity.</p> <p>23 "For patients and families seeking guidance</p> <p>24 going forward I will say this based upon my own</p> <p>25 professional experience, consider consultation with a</p>
<p style="text-align: right;">Page 127</p> <p>1 comments would be conveyed fairly. My comments were</p> <p>2 limited to trans feminine persons, not trans masculine,</p> <p>3 a point not made.</p> <p>4 "My concerns regarding consent included</p> <p>5 long-term sexual function data that we currently do not</p> <p>6 know, although patients retain sensation including</p> <p>7 clitoris and G spot. Sexual naivete is a potential</p> <p>8 concern, but not central to my argument, and it is far</p> <p>9 from central that patients will sustain permanent sexual</p> <p>10 dysfunction." I'm sorry, "It is far from certain," I</p> <p>11 said central, she wrote certain.</p> <p>12 "It is possible that adults with a history of</p> <p>13 puberty blockade will go on to have a satisfying sexual</p> <p>14 life, but these patients need to be tracked and this</p> <p>15 measure documented. My concerns regarding fertility are</p> <p>16 secondary, a potential that many trans feminine persons</p> <p>17 are willing to forgo."</p> <p>18 She said, "My concerns regarding puberty</p> <p>19 blockade and its negative impact on later genital</p> <p>20 surgery remain and are not allayed by new techniques of</p> <p>21 vaginoplasty including perinatal, peritoneal pull</p> <p>22 through. Complications and challenges for these</p> <p>23 patients are without a doubt increased.</p> <p>24 "My hope is that colleagues, onlookers and</p> <p>25 members of the transgender community at large will</p>	<p style="text-align: right;">Page 129</p> <p>1 gender surgeon prior to blockers. Not all puberty</p> <p>2 blocked individuals will have insufficient growth going</p> <p>3 into blockers, their puberty may be deemed beneficial</p> <p>4 for some. And if you can possibly stand a bit of</p> <p>5 puberty, the extra genital skin growth, likely orgasm</p> <p>6 and potential fertility may be attractive enough to</p> <p>7 consider the option. Early and post pubertal kids in</p> <p>8 their early teens still transition extremely well.</p> <p>9 "For doubters, conservatives, naysayers and</p> <p>10 haters that continue to misgender, mischaracterize and</p> <p>11 malign trans people around the globe, trans persons</p> <p>12 around the globe, you've lost credibility with me, and</p> <p>13 likely with God above." Did I read that correctly?</p> <p>14 A. I presume you have read it correctly. I lost --</p> <p>15 let me tell you, yes, you read it correctly.</p> <p>16 Q. Thank you. So you were not aware of this</p> <p>17 statement made by Marcie Bowers after the Abigail Shrier</p> <p>18 article was published that you cited?</p> <p>19 A. That's what I said.</p> <p>20 Q. And you understand that she maintains that her</p> <p>21 comments were taken out of context and used with an</p> <p>22 intent that she did not intend, you understand that's</p> <p>23 what she's saying is what I should say?</p> <p>24 A. That's what I understand what she is saying,</p> <p>25 yes.</p>



<p style="text-align: right;">Page 130</p> <p>1 Q. Okay, great. Let's go back to your report,  2 Exhibit 1, Dr. Levine, again at Page 14, but at  3 Paragraph 24.  4 A. I'm sorry, wait a second. All right. Okay,  5 Paragraph 24.  6 Q. Okay.  7 A. I'm not there, I'm not there yet. Okay.  8 Q. First sentence, "Of note in 2016, health and  9 human services came under significant pressure from  10 activists to adopt the WPATH 'standards of care' as the  11 prevailing guideline for determining medical necessity  12 considerations for gender affirming surgeries." Do you  13 have, or what evidence do you cite to for support of the  14 contention that they were pressured, came under  15 significant pressure from activists?  16 A. I think that was in the beginning of the report.  17 Q. I'm sorry, which report?  18 A. The report that I'm citing.  19 Q. There's, but there's no citation after that  20 sentence, so I'm asking what are you referring to for  21 that contention?  22 A. Well, Medicare in 2016 reviewed I think 104  23 studies, or maybe 154 studies, something like that, a  24 large number of studies and, and I think listed every  25 study and the methodologic strengths and limitations of</p>	<p style="text-align: right;">Page 132</p> <p>1 sure that you can see it.  2 A. I can, I can read it.  3 Q. Okay. So the first paragraph under decision  4 summary, the second sentence says, "The Centers for  5 Medicare and Medicaid Services is not issuing a national  6 coverage determination at this time on gender  7 reassignment surgeries for Medicare beneficiaries with  8 gender dysphoria because the clinical evidence is  9 inconclusive for the Medicare population."  10 And then in the second paragraph -- sorry, let  11 me just, I'll just go from the second paragraph there,  12 "In the absence of an NCD, coverage determinations for  13 gender reassignment surgery under 1862(a)(1)(A) of the  14 Social Security Act and any other relevant statutory  15 requirements will continue to be made by the local MAC's  16 on a case-by-case basis. To clarify further, the  17 results of this decision is not national noncoverage,  18 rather it is that no national policy will be put in  19 place for the Medicare program. In the absence of a  20 national policy, MAC's will make the determination of  21 whether or not to cover gender reassignment surgery  22 based on whether gender reassignment surgery is  23 reasonable and necessary for the individual beneficiary  24 after considering the individual's specific  25 circumstances."</p>
<p style="text-align: right;">Page 131</p> <p>1 those studies and then concluded what I'm talking about  2 in this paragraph.  3 Q. I understand that, but I'm saying where, where  4 did they say that they were, came under significant  5 pressure?  6 A. It was my understanding, at the moment today  7 it's my understanding that I read that in the report.  8 Q. Okay. So let me, let me introduce that.  9 (Exhibit 12 marked for identification.)  10 Q. Okay, this should be --  11 A. You know, from the last sentence in that  12 paragraph, it sounds like they were asked to mandate  13 coverage by some group of people and they refused, so.  14 Q. I understand that, Dr. Levine. But I'm, I'm  15 trying to figure out where you, where that came from,  16 I'm just trying to figure out where that came from. So  17 I've introduced SL12, Exhibit SL12. You should be able  18 to see that now.  19 A. Okay.  20 Q. Okay. So looking -- first of all, can you read  21 the text? You may need to zoom in.  22 A. I, I see, "Gender dysphoria and gender  23 assignment surgery," that's what you're talking about,  24 that's Number 12.  25 Q. Yes, the text is small, so I just wanted to make</p>	<p style="text-align: right;">Page 133</p> <p>1 So you see there that the coverage is, as  2 explained by CMS here, is supposed to contemplate,  3 "Whether it is reasonable and necessary for the  4 individual after considering the individual's specific  5 circumstances," right?  6 A. Right.  7 Q. Okay. And so you, you do understand that West  8 Virginia's Medicaid Program doesn't even consider the  9 individual circumstances of Medicaid patients in its  10 contemplations of banning surgical care, right?  11 MR. DAVID: Objection to form.  12 A. Again, I don't think my expertise has anything  13 to do with the determination of insurance or government  14 policies, but I think what you're saying is that West  15 Virginia based on this document has a, I don't know,  16 West Virginia or it's the insurance carrier has to make  17 policy and, and this document is not dictating the type  18 of policy that, the type of policy decisions that they  19 make. This is, I think this document is saying it has  20 to be done on a state-by-state basis or on a local  21 basis.  22 Q. No, it's saying -- so, okay, so a couple of  23 things. The sentence there says that the, the MAC's,  24 which is a, an acronym for --  25 A. Medicare --</p>

<p style="text-align: right;">Page 134</p> <p>1 Q. Medicare --</p> <p>2 COURT REPORTER: Hold on, I didn't get</p> <p>3 that, I didn't get that, you guys were talking at the</p> <p>4 exact same time. It's an acronym for what?</p> <p>5 MR. CHARLES: Medicare Administrative</p> <p>6 Contractors. Thanks, Kelley.</p> <p>7 Q. So that sentence there says, "In the absence of</p> <p>8 a national policy, MAC's will make the determination of</p> <p>9 whether or not to cover gender reassignment surgery</p> <p>10 based on whether gender reassignment surgery is</p> <p>11 reasonable and necessary for the individual beneficiary</p> <p>12 after considering the individual's specific</p> <p>13 circumstances."</p> <p>14 So what I'm saying is, or what I'm asking you</p> <p>15 rather is that is different, that consideration of</p> <p>16 individual specific circumstances is not what happens</p> <p>17 when there's a categorical ban like in the West Virginia</p> <p>18 Medicaid Program?</p> <p>19 MR. DAVID: Objection to form.</p> <p>20 A. So I guess, you know, there's not a categorical</p> <p>21 ban on mastectomy in West Virginia. There's a</p> <p>22 categorical ban for mastectomy when a person is</p> <p>23 transgender identified and wants it for the purposes of</p> <p>24 diminishing their breast dysphoria where that component</p> <p>25 of gender dysphoria is caused by the presence of a</p>	<p style="text-align: right;">Page 136</p> <p>1 paragraph -- actually, hang on a second. Dr. Levine,</p> <p>2 let's go ahead and go to Page 26 of your report,</p> <p>3 Exhibit 1.</p> <p>4 A. Okay. Let me, I have to scroll back. Did you</p> <p>5 say page or Paragraph 26?</p> <p>6 Q. That would be Page 26.</p> <p>7 A. Okay, I'm on Page 26.</p> <p>8 Q. Okay. Okay. So, Dr. Levine, you've testified</p> <p>9 previously that you generally provide care along some of</p> <p>10 the same guidelines as WPATH, right?</p> <p>11 A. In a general way, sure.</p> <p>12 Q. And the difference from your view is that you</p> <p>13 require psychotherapy for some not necessarily</p> <p>14 predetermined length of time for patients that you see</p> <p>15 before you will authorize any kind of like medical</p> <p>16 intervention, right?</p> <p>17 A. I don't want to answer that question right or</p> <p>18 wrong because embedded in the question is the word</p> <p>19 psychotherapy and I don't know what you understand by</p> <p>20 psychotherapy, I mean, you're a lawyer and I'm a</p> <p>21 practitioner of psychotherapy. And I think when a</p> <p>22 lawyer uses psychotherapy it is a certain concept about</p> <p>23 I'm trying to achieve a certain aim, you see. And in</p> <p>24 the context of the question that you've asked, you could</p> <p>25 substitute an extended period of time with the patient</p>
<p style="text-align: right;">Page 135</p> <p>1 breast.</p> <p>2 So the individual surgeries, any particular</p> <p>3 individual surgeries that we may make reference to today</p> <p>4 are not categorically banned in West Virginia, but in my</p> <p>5 understanding is they are currently banned for when the</p> <p>6 indication for the surgery is trans, is to, is to</p> <p>7 diminish breast dysphoria or gender dysphoria.</p> <p>8 Q. Right. Dr. Levine, that's what we're talking</p> <p>9 about, we're talking about categorical exclusion for</p> <p>10 surgeries for the purpose of treating gender dysphoria.</p> <p>11 A. Yes. And I think that, you know, in some</p> <p>12 reading of this particular document they're leaving it</p> <p>13 to a case-by-case basis, but I kind of think there is</p> <p>14 some ambiguity here about medical, Medicare</p> <p>15 Administrative Contractors being the insurance, these</p> <p>16 are the insurance companies that we're talking about and</p> <p>17 when we're talking about Medicaid we're talking about</p> <p>18 every state and its relationship to Medicaid.</p> <p>19 So I think in a sense, I understand your point</p> <p>20 that it, it looks like if an individual state's program</p> <p>21 does not want to provide transgender surgeries it may be</p> <p>22 categorical and it's inconsistent in that particular</p> <p>23 reading of this decision summary.</p> <p>24 Q. Okay. So that, right, so that what I'm saying</p> <p>25 is you state in your report at the end of that</p>	<p style="text-align: right;">Page 137</p> <p>1 to discuss the patient's current situation, the</p> <p>2 patient's past situation, and what the patient knows</p> <p>3 about the consequences of a decision to transition in</p> <p>4 one way or another, socially, endocrinally, surgically.</p> <p>5 Q. Okay. Dr. Levine, I appreciate --</p> <p>6 A. I'm a little hesitant to answer your question, I</p> <p>7 think you, you understand psychotherapy differently than</p> <p>8 I do.</p> <p>9 Q. That's fine. I, I need a shorthand way to refer</p> <p>10 to the universe of what you just described that does not</p> <p>11 take three minutes to describe it. So I'm using</p> <p>12 psychotherapy, but please tell me what you mean by</p> <p>13 psychotherapy. I understand it to be what you just</p> <p>14 described and that's how I'm using it.</p> <p>15 A. Right. I want to spend enough time talking with</p> <p>16 people so that I can understand the development of this</p> <p>17 person and how they got to this point, what they think</p> <p>18 the benefits of this new identity will be for them, and</p> <p>19 what they know about what is known and what is not known</p> <p>20 about the long-term consequences, the surgical</p> <p>21 complications and the lives of other people who have</p> <p>22 transitioned before. I'm happy to call that a</p> <p>23 psychotherapeutic process, but I know other people who</p> <p>24 don't believe in psychotherapy think that this is, they</p> <p>25 mischaracterize this process, they don't understand what</p>

<p style="text-align: right;">Page 138</p> <p>1 I'm talking about and, and they often label me as an 2 enemy or something. 3 Q. Okay. Well, I'm not doing that right now, Dr. 4 Levine, I'm literally just asking what, first of all, 5 what, what would you describe what you do with patients, 6 is it not psychotherapy? 7 A. Yes, the insurance company calls what I do 8 psychotherapy. I'm having, I'm forming a professional 9 relationship with a person, I am listening to their 10 concerns, I'm trying to help them understand the answers 11 to the questions that I've just previously said, in 12 other words, what are the developmental forces that have 13 made you think that you are transsexual, that this is a 14 good solution for you, do you know, do you have, do you 15 have the facts that medical science has about this 16 subject, you see. These are the conversations based 17 upon a trusted relationship with a doctor, me, is what 18 the insurance company calls and the culture calls 19 psychotherapy. 20 Q. Okay. 21 A. There are, there are 200 forms of psychotherapy 22 listed, you know, and so it's a generic term. And I 23 appreciate that you need some short word to describe 24 this. I'm doing the best I can to tell you the 25 processes of psychotherapy with Dr. Levine when he's</p>	<p style="text-align: right;">Page 140</p> <p>1 WPATH has fully adopted some mix of the medical and 2 rights paradigm discussed above. It has downgraded the 3 role of counseling or psychotherapy as a requirement for 4 these life-changing processes. WPATH no longer 5 considers pre-operative psychotherapy to be a 6 requirement. It is important to WPATH if the person has 7 gender dysphoria, the pathway to the true, the 8 development of this state is not. Cited Levine, 9 Reflections, at 240. Two separate evaluations, one from 10 Canada and one from the UK reviewed WPATH's guidelines 11 and found them untrustworthy." 12 So for that footnote 113 you've cited the Dahlen 13 study which we talked about and then there's also a 14 citation here that says, "See also," and then there's a, 15 a Web address, do you see that, the very last line? 16 A. Yeah, yeah, right. 17 Q. It says, "Gender report, CA"? 18 A. Yeah. 19 (Exhibit 13 marked for identification.) 20 Q. Okay. There should be another exhibit there for 21 you, Exhibit 13. Just let me know when you can see 22 that. 23 A. Okay. Okay. 24 Q. Okay. 25 A. Yeah, okay.</p>
<p style="text-align: right;">Page 139</p> <p>1 working with patients. 2 Q. Okay. So back to my question. On some, on some 3 level that that is, that universe of care that you are 4 providing, which again, I think I'm still going to call 5 it psychotherapy, but I understand your explanation that 6 it is, that encompasses a lot that you do in your, in 7 your clinical practice, but again, the difference for 8 you between the Levine way, if we can shorthand, and 9 WPATH is that you cultivate, you engage in that process 10 as a requirement before you will authorize any kind of 11 medical intervention for a patient for the treatment of 12 gender dysphoria? 13 A. That's true. 14 Q. Okay. Thank you. But even still as a part of 15 your practice as we discussed earlier, you still 16 occasionally write letters of authorization for medical 17 interventions, like endocrine treatments or surgical 18 interventions? 19 A. Yes. 20 Q. Okay. Okay. Let's go back to your report, 21 please, to Page 35. 22 A. I am there. 23 Q. Okay. And looking at Paragraph 70, let's start 24 with Paragraph 70. I take that back, let's go with 25 Paragraph 71 at the bottom of the page, "In recent years</p>	<p style="text-align: right;">Page 141</p> <p>1 Q. Have you, have you seen this article before 2 either on the Internet or printed out perhaps? 3 A. The reason I cited it is that I had read it 4 before. 5 Q. Okay. And this is not a peer reviewed journal, 6 is it? 7 A. This is a journalist, but if you look very 8 carefully at the, its length and its content, it's very 9 impressive. 10 Q. Okay. Is this the review from Canada that you 11 were talking about in that sentence -- 12 A. Yes, yes, it is. 13 Q. Okay. But it's, it's not a systematic review 14 like the one from the UK? 15 A. It's not systematic in that it wasn't done by a 16 community of scientists, a committee of scientists. 17 Q. Okay. And the -- 18 A. It is systematic and it is a review, but it's 19 one person's review. 20 Q. Right. So it's more, we were discussing the 21 difference between systematic reviews earlier today, 22 it's a, it's, it's not a scientific committee that's 23 done in a, in a formal way that we were discussing, it's 24 more akin to that latter one person reviewing things 25 kind of --</p>



<p style="text-align: right;">Page 142</p> <p>1 A. It's an investigative report by a journalist.</p> <p>2 Q. Right. And you see in the first page, Dr.</p> <p>3 Levine, it says, "The following investigative report was</p> <p>4 developed by @LisaMacRichards (a pseudonym)"?</p> <p>5 A. Yeah, okay, right.</p> <p>6 Q. Okay.</p> <p>7 A. I see I'm wrong, she wasn't the journalist.</p> <p>8 Q. So we, you don't know who this author is, right?</p> <p>9 A. Well, her real identity?</p> <p>10 Q. Correct, yeah.</p> <p>11 A. No, I don't know who Lisa Mac Richards really</p> <p>12 is.</p> <p>13 Q. Okay. So it's hard to know if she's an actual</p> <p>14 person?</p> <p>15 A. If she's an actual person, is that what you</p> <p>16 said?</p> <p>17 Q. What I mean to say is, because she's using a</p> <p>18 pseudonym, you can't confirm her identity is what she</p> <p>19 represents it is, right?</p> <p>20 A. Well, she says it's a pseudonym, so I presume</p> <p>21 the rest of the paragraph is correct, that she works at</p> <p>22 a Canadian hospital and holds a master's of science</p> <p>23 degree and, yeah.</p> <p>24 Q. But what I mean is there's no way to confirm</p> <p>25 that because we don't know what her name is?</p>	<p style="text-align: right;">Page 144</p> <p>1 were trying to make an exception of this psychiatric</p> <p>2 problem of the trans identity and saying we don't need</p> <p>3 to have psychotherapy, but we do need to have a</p> <p>4 psychotherapeutic approach to every other psychiatric</p> <p>5 developmental problem that we know of, you see. So</p> <p>6 we're making an exception for the trans people and Dr.</p> <p>7 Levine is saying why are we doing this, why are we</p> <p>8 making an exception.</p> <p>9 This is a, this new identity is, is an evolution</p> <p>10 of a psychological process, maybe even contributed by</p> <p>11 some biological mysterious force, but why are we making</p> <p>12 an exception here. Why don't we approach this like,</p> <p>13 like we approach every other psychiatric problem in</p> <p>14 teenagers or adults, why don't we investigate it first</p> <p>15 before we make recommendations. In a one hour</p> <p>16 investigation or conversation focusing on gender</p> <p>17 identity is not what I consider, Dr. Levine considers an</p> <p>18 adequate psychiatric evaluation.</p> <p>19 Q. Okay. I understand, I understand that, Dr.</p> <p>20 Levine. But the, the, you know, going back to what you</p> <p>21 were saying about how, you know, no psychiatric</p> <p>22 evaluation before intervention. Do you have, you know,</p> <p>23 what evidence do you have -- let me back up.</p> <p>24 What, you know, you talk a lot in your report</p> <p>25 about how these gender affirming clinics and urban</p>
<p style="text-align: right;">Page 143</p> <p>1 A. It could be written by a man, I don't know, it</p> <p>2 could be written by a committee, I have no idea.</p> <p>3 Q. Okay. Okay. So going back to what we were</p> <p>4 talking about just a few minutes ago, Dr. Levine, about</p> <p>5 your approach versus WPATH. You, you've said before,</p> <p>6 not, not necessarily today, but you've testified in</p> <p>7 other depositions that your approach has the limitation</p> <p>8 that there's not any scientific evidence or long-term</p> <p>9 studies to support it, right?</p> <p>10 A. I think in particular what I said is that, that</p> <p>11 the status of the outcome, the outcome status and the</p> <p>12 methodologic status of psychotherapy as a first line</p> <p>13 approach to the trans adolescent has, does not have a</p> <p>14 firm evidence base just as trans affirmative care does</p> <p>15 not have a firm evidence base.</p> <p>16 So oftentimes that's, that's, I get a question</p> <p>17 just like you ask, you just posed sort of implying that</p> <p>18 there's no evidence that my, my recommendations have a</p> <p>19 scientific proven basis to it. And that is correct,</p> <p>20 except that all other psychiatric difficulties are</p> <p>21 treated with, in our society both European and American</p> <p>22 and Asian societies by a psychotherapeutic extended</p> <p>23 evaluation and treatment approach before, with or</p> <p>24 without psychiatric medications, you see.</p> <p>25 And so we are trying to make a, you, some people</p>	<p style="text-align: right;">Page 145</p> <p>1 centers have cropped up that are providing affirming</p> <p>2 care in one hour, again, we talked about the 35 parents</p> <p>3 you had talked to, you've mentioned a couple of patients</p> <p>4 you've talked to, but you don't have, or I should say</p> <p>5 what evidence can you provide me today that is, is</p> <p>6 scientific peer reviewed published data showing that</p> <p>7 this is actually what's happening in these clinics?</p> <p>8 A. Well, if I look at Exhibit 6. Do you know what</p> <p>9 the, the first name for this center was and the name of</p> <p>10 so many of the 50 or so centers are? And it has the</p> <p>11 term gender affirming care, the clinic, you see. If you</p> <p>12 look at all of the materials in Exhibit 6, it's about</p> <p>13 support and affirmation, it's not about investigation,</p> <p>14 it's not about psychotherapy. And, and you see, gender</p> <p>15 affirming care has been taken over, it's been taking</p> <p>16 over the world's sensibilities without any scientific,</p> <p>17 first demonstrating its efficacy with scientifically</p> <p>18 respectable methods.</p> <p>19 Q. I understand that, Dr. Levine, but that's not my</p> <p>20 question. My question is, what evidence can you point</p> <p>21 to that these kinds of interactions are happening in</p> <p>22 clinics? Is your basis that the, are you basing that on</p> <p>23 the way these centers are named?</p> <p>24 A. I'm basing it on what they're named and I'm</p> <p>25 looking at the document that you are, are talking about.</p>

<p style="text-align: right;">Page 146</p> <p>1 Is there anything in this document that, that's saying</p> <p>2 wait a second, this may be a serious, that this may be a</p> <p>3 mistake for certain people, for example, the people who</p> <p>4 have the transition. This is the guide to transsex</p> <p>5 gender friendly clinics by region, you see. Transgender</p> <p>6 friendly doesn't mean, doesn't simply mean that we're</p> <p>7 not going to discriminate against you, call you names or</p> <p>8 tell you, make you feel unwelcome because you are</p> <p>9 transgender. That really means that we will affirm you</p> <p>10 immediately and get you as quickly as possible the</p> <p>11 treatment that you deserve, whether you --</p> <p>12 Q. How do you, how do you know that, what are you</p> <p>13 basing that on?</p> <p>14 A. How do you know that it's not true.</p> <p>15 Q. How do you know that's happening just based on</p> <p>16 the name of the clinics?</p> <p>17 A. Well, I've been in other, I've been involved in</p> <p>18 other lawsuits and have had opportunities to read the</p> <p>19 case reports of kids, teenagers and see what has</p> <p>20 happened to them and what kind of care they're getting</p> <p>21 and who's taking care of these people.</p> <p>22 And so they're, everything that, all my, my</p> <p>23 collective experiences tells me that, that there is not,</p> <p>24 there is not a prudent psychotherapeutic, to use my</p> <p>25 words, process for many of these people in a transgender</p>	<p style="text-align: right;">Page 148</p> <p>1 Q. The chairman of that committee, okay. Thank</p> <p>2 you.</p> <p>3 A. And most, with very little exception I had a</p> <p>4 significant editorial role in creating every sentence in</p> <p>5 that 21-page document.</p> <p>6 Q. Okay. And you've testified in other depositions</p> <p>7 that even though the, there have been changes made to</p> <p>8 the standards of care in subsequent versions, you still</p> <p>9 continue to see your work reflected in those versions,</p> <p>10 right?</p> <p>11 A. Yes, my language.</p> <p>12 Q. Yes, mm-hmm.</p> <p>13 A. Yeah, my language, right. In fact, the next</p> <p>14 version which came out I think three years later or two</p> <p>15 years later I think was pretty much word for word except</p> <p>16 for a requirement for one letter for endocrine treatment</p> <p>17 rather than two, which is what my committee of eight</p> <p>18 people recommended.</p> <p>19 Q. Okay. And you've testified before that even</p> <p>20 Version 7, which is, you know, one more, obviously one</p> <p>21 more removed from Version 6, that that, as you read it</p> <p>22 much of the language you had actually still, it was</p> <p>23 still reflecting your language in that version even,</p> <p>24 even though it's a much longer document?</p> <p>25 A. Well, yeah, I think the introduction section</p>
<p style="text-align: right;">Page 147</p> <p>1 friendly especially designed specialty clinic. Those</p> <p>2 clinics exist to take care of trans people, to give them</p> <p>3 hormones and to get them surgery, that exists.</p> <p>4 Q. But what you're describing --</p> <p>5 A. It exists to do psychotherapy.</p> <p>6 Q. Okay. And what you described, Dr. Levine, is</p> <p>7 the basis for your, for this opinion, right?</p> <p>8 A. The basis for my opinion is my collective</p> <p>9 experience of dealing, watching, participating in the</p> <p>10 evolution of the study of transsexual care over, over</p> <p>11 since 1974.</p> <p>12 Q. Okay. So your report states that you were</p> <p>13 involved with WPATH before it was called WPATH, when it</p> <p>14 was called the Harry Benjamin --</p> <p>15 A. Can I help you?</p> <p>16 Q. Yes. Harry Benjamin?</p> <p>17 A. International Gender Dysphoria Association.</p> <p>18 Q. Thank you. And you were involved around 1999</p> <p>19 when the 6th version of the standards of care was</p> <p>20 released, right, we talked about that?</p> <p>21 A. Yes.</p> <p>22 Q. Okay. And it's, it's true that you helped to</p> <p>23 draft portions of that version, right?</p> <p>24 A. Actually, my report misstates me as the</p> <p>25 co-chair. If I remember correctly, I was the chairman.</p>	<p style="text-align: right;">Page 149</p> <p>1 about what guidelines were and, and the problems of</p> <p>2 cross culture, cross country rules affecting the laws</p> <p>3 are different and the, that we wanted this to be a</p> <p>4 information guide for, for patients and parents and</p> <p>5 wives and husbands and so forth.</p> <p>6 I think, you know, once, once we got, I mean, I</p> <p>7 don't have it in front of me and I'm not sure I could</p> <p>8 recognize every sentence I wrote anyway, but, but they</p> <p>9 did, they did continue to use some of my sentences, some</p> <p>10 of my concepts. It was my concept that there is a</p> <p>11 difference between readiness criteria and eligibility</p> <p>12 criteria, that was one of my contributions</p> <p>13 Q. Thank you. And, and I think also you testified</p> <p>14 in the Soneeya trial that you had asked to be involved</p> <p>15 in helping to write standards of care 8 but were told</p> <p>16 that you, in order to do so you had to be a WPATH</p> <p>17 member, right?</p> <p>18 A. Yes.</p> <p>19 Q. And looking back at your report -- actually,</p> <p>20 give me just a minute here. Actually, Dr. Levine,</p> <p>21 let's --</p> <p>22 MR. CHARLES: Sorry, Kelley and Kraig, can</p> <p>23 we go off the record real quick.</p> <p>24 VIDEO TECHNICIAN: We're going off the</p> <p>25 record at 2:26 p.m.</p>

<p style="text-align: right;">Page 150</p> <p>1 (A break was taken at 1:26 p.m.)</p> <p>2 VIDEO TECHNICIAN: This is media No. 5 in</p> <p>3 the deposition of Dr. Stephen Levine. Today is</p> <p>4 April 27, 2022. We're going back on the record at</p> <p>5 2:32 p.m.</p> <p>6 BY MR. CHARLES:</p> <p>7 Q. Okay. Dr. Levine, let's go back to your report</p> <p>8 to Page 38.</p> <p>9 A. 30?</p> <p>10 Q. I'm sorry 38.</p> <p>11 A. 38, okay.</p> <p>12 Q. Okay. Paragraph 79 at the top of the page, you</p> <p>13 state that, "WPATH doesn't acknowledge the well</p> <p>14 documented phenomenon rapid onset gender dysphoria, now</p> <p>15 commonly occurring among adolescents, despite the fact</p> <p>16 that multiple clinicians report this is just what they</p> <p>17 are observing is happening." What, what citation do you</p> <p>18 have for that assertion that rapid onset gender</p> <p>19 dysphoria is commonly occurring among adolescents?</p> <p>20 A. Oh, my goodness. The incidents of gender</p> <p>21 dysphoria in adolescents has increased dramatically, I</p> <p>22 am sure you are aware of this. It has increased</p> <p>23 dramatically among biologic males and biologic females,</p> <p>24 but in particular it has happened in girls who at</p> <p>25 puberty or shortly after puberty declared themselves to</p>	<p style="text-align: right;">Page 152</p> <p>1 papers and what research would you refer me to or is</p> <p>2 referenced in your report as evidence that this</p> <p>3 hypothesis actually exists or that there's any</p> <p>4 scientific study to support it?</p> <p>5 A. No. 1, this is not a hypothesis, this is a</p> <p>6 demonstrated fact.</p> <p>7 Q. Okay. Based on what, Dr. Levine, that's what</p> <p>8 I'm asking, what are the peer reviewed studies?</p> <p>9 A. If you look up the presentations of Kenneth</p> <p>10 Zucker, if you look at papers, I can't give you the</p> <p>11 authors at the moment from Europe, this has been</p> <p>12 documented by DiAngelo I believe in Australia, by</p> <p>13 Clayton in Australia.</p> <p>14 It seems to me there is no disagreements about</p> <p>15 this except I've heard the cynical response that what</p> <p>16 rapid onset gender dysphoria really means is that the</p> <p>17 parents have suddenly discovered that their kids have</p> <p>18 been transgender, meaning to deny the parental reports</p> <p>19 that the children were not cross gender identified prior</p> <p>20 to that, even though the kids say, well, I was never</p> <p>21 comfortable with being a boy or a girl.</p> <p>22 Q. Okay. So you, for this contention in your</p> <p>23 report you cite one thing and that is Midgen A.</p> <p>24 Hutchinson and her study is entitled, "In support of</p> <p>25 research into rapid onset gender dysphoria." So that</p>
<p style="text-align: right;">Page 151</p> <p>1 be trans boys or trans males.</p> <p>2 The historic pattern throughout most of the</p> <p>3 world was 3.5 to 4 biologic males who wanted to be women</p> <p>4 to biologic females who wanted to be men dominated</p> <p>5 dramatically for decades in the '70s and the '80s and</p> <p>6 the '90s and the early 2000s. But since 2005 there's</p> <p>7 been a growing incidence of request for services and</p> <p>8 particularly request for services from girls assigned at</p> <p>9 birth who wanted to be males.</p> <p>10 Some of us have come to in recent years call</p> <p>11 this delayed or pubertal or rapid onset of gender</p> <p>12 dysphoria, meaning it's a pubertal phenomenon because</p> <p>13 there was no evidence prior to that except in the</p> <p>14 retrospective subjective histories given by these kids</p> <p>15 that they had any indication, parents and themselves,</p> <p>16 had no behavioral indications that they were trans</p> <p>17 identified or even sort of leaning in that direction.</p> <p>18 Q. I understand that, Dr. Levine, and I'm not</p> <p>19 talking necessarily about the, the increase in</p> <p>20 referrals, I'm talking about this phenomenon that you</p> <p>21 referenced called rapid onset gender dysphoria. So not</p> <p>22 just adolescent onset gender dysphoria, which I</p> <p>23 understand you're saying has somewhat increased since</p> <p>24 2005, but rapid onset gender dysphoria. And I'm</p> <p>25 specifically asking what peer reviewed studies, what</p>	<p style="text-align: right;">Page 153</p> <p>1 was published in 2020 and I don't, I'm not seeing here</p> <p>2 any of the other --</p> <p>3 A. One, one of the reasons you're not seeing it is</p> <p>4 that I assume that everyone understands that this is</p> <p>5 true.</p> <p>6 Q. Well, Dr. Levine, this is an expert report and</p> <p>7 you have to include all of your expert opinions, and</p> <p>8 you're also required under Rule 26 to disclose all of</p> <p>9 the data and research that you considered for those</p> <p>10 opinions. That's the purpose of our deposition today is</p> <p>11 for me to understand and to have you put on the record</p> <p>12 what you relied on to establish your opinions, so that's</p> <p>13 what I'm trying to get at. And, and I understand what</p> <p>14 you're saying that from your vantage point as a</p> <p>15 clinician outside of the legal sphere that there are</p> <p>16 things you think are givens, but we can't operate like</p> <p>17 that unfortunately. So I need to, I need to understand,</p> <p>18 and all I see here is the Midgen A. Hutchinson study</p> <p>19 that's asking for support of, that's offering that she</p> <p>20 wants to support research into this phenomenon, not that</p> <p>21 the phenomenon has been evidenced to exist. Does that</p> <p>22 make sense?</p> <p>23 A. Yes. May I comment on that?</p> <p>24 Q. On Hutchinson, yeah. Let me pull it up</p> <p>25 actually.</p>

<p style="text-align: right;">Page 154</p> <p>1 A. No, about my deficiencies here, because I can 2 provide you right now some additional places for you to 3 look at if you, if you think that only one reference is, 4 is inadequate. And I apologize, I don't think I 5 understood as clearly as you stated what Rule 26 means 6 or meant, or even consists of. 7 But if you look at all the things that I've 8 already made mention to, like the Sweden report and the 9 Finland report and the French report and the UK reports, 10 all these reviews have all commented on the rising, the 11 rising incidents of transgender requests for care. The 12 very fact that there are now over 50, 50 trans clinics 13 in the United States and probably growing is an 14 indication of the rising incidence of transgender 15 phenomenon in adolescents. 16 And so it seems to me that Rule 26 17 notwithstanding, anybody who's familiar with this field 18 knows about the, about not the hypothesis, the 19 hypothesis is about why it's happening, not whether it's 20 happening, you see, it's fact. And it's been -- and so 21 I, I, based on your definition I plead inadequate in 22 writing this report, but it's not really the lack of 23 evidence because I, I think even people at WPATH would 24 recognize and probably has recognized the rising 25 incidence. I think the standards of care draft No. 8</p>	<p style="text-align: right;">Page 156</p> <p>1 Q. Yes, correct. 2 A. Okay. All right, I see it. 3 MR. CHARLES: So this is, for the record 4 I'm showing Dr. Levine what has been marked as 5 Vanderbussche article entitled, "Detransition related 6 needs and support: A cross-sectional online survey, by 7 Elie" -- oh, excuse me, it's Elie Vandenbussche, not 8 Vanderbussche. 9 Q. And, and you've seen this article before, Dr. 10 Levine? 11 A. Yes. 12 Q. Okay. Scroll please to the, the first page of 13 text. Let me know if you can see that or if you need a 14 minute to zoom in. 15 A. You mean, "Introduction"? 16 Q. Yes, it has, it's the page that has introduction 17 on it, yes. 18 A. Okay. 19 Q. So from the abstract, the first sentence, the 20 abstract is in a, set off in a blue box there at the 21 top? 22 A. Yes, yes. 23 Q. It says, "The aim of this study is to analyze 24 the specific needs of detransitioners from online 25 detrans communities and discover to what extent they are</p>
<p style="text-align: right;">Page 155</p> <p>1 makes reference to it as well. This is not to be 2 denied. 3 So if you're questioning whether, whether this 4 is really true, I think you're just simply wrong, but 5 you're not, you may not be questioning that. I'm wrong 6 and I didn't document adequately that sentence and I 7 apologize, I stand corrected. 8 Q. Okay. So let's turn in your report, Dr. Levine, 9 here to the following sentence which says, "There is 10 also no chapter on detransition despite the evidence 11 that a growing number of young people regret transition 12 and wish to reverse it," do you see that, are you still 13 on Page 38 there? 14 A. I do. 15 Q. Okay. So for this sentence here you have 16 provided a couple of citations. The first is an article 17 by Vanderbussche I believe, if I'm pronouncing it 18 correctly, and then a second article by Littman. So 19 let's, let's take each of those in turn. And I'll just 20 introduce the Vanderbussche exhibit, give me just a 21 moment. 22 (Exhibit 14 marked for identification.) 23 A. Is it up now? 24 Q. Let me know when you can see it. 25 A. This will be 14?</p>	<p style="text-align: right;">Page 157</p> <p>1 being met. For this purpose a cross-sectional online 2 survey was conducted and gathered a sample of 237 male 3 and female detransitioners. The results showed 4 important psychological means in relation to gender 5 dysphoria, co-morbid conditions, feelings of regret and 6 internalized homophobic and sexist prejudices. It also 7 found that many detransitioners need medical support 8 notably in relation to stopping/changing hormone 9 therapy, surgery/treatment complications and reversal 10 interventions." So the aim of this study as outlined 11 here in the abstract is to analyze the specific needs of 12 detransitioners, right? 13 A. Yes. 14 Q. Okay. Not to demonstrate that there is a 15 growing number of young people who regret transition or 16 wish to reverse it, right? 17 A. It's true. But you see, you're, you're taking 18 the reference out of that sentence and missing the first 19 phrase of that sentence. This sentence that you're 20 drawing attention to is that WPATH's standards of care 21 draft did not have any section on the phenomenon of 22 detransition. 23 Detransition exists and detransition is a 24 reflection of those adolescents or people, or adults who 25 have at one time in their lives thought that they needed</p>

<p style="text-align: right;">Page 158</p> <p>1 this care and then after they lived following the care  2 they decided that their problems have not been solved  3 and they decided to return to the gender expression --  4 Q. I understand that, Dr. Levine, and I'm not  5 actually contesting the assertion in your, in your  6 report that detransition exists at all.  7 A. All right.  8 Q. What I'm asking about is your assertion in the  9 latter half of that sentence that says that there is a  10 growing number of young people who regret transition and  11 wish to reverse it. Again, I'm just trying to  12 understand what you're saying here and on what basis you  13 are making those assertions.  14 So I'm not asserting whether or not  15 detransitioning exists, my question is, this study did  16 not look at how many detransitioners are there now as  17 opposed to any other time in history, it was not a  18 qualitative or quantitative analysis. It was a study  19 according to the abstract here, and I'm just asking you  20 to confirm that, about the specific needs of  21 detransitioners, both psychological, medical, other  22 kinds of support, right? So that's what I'm saying is  23 this study is not, the aim is not to quantify the number  24 of, whether the number of detransitioners is growing or  25 shrinking or staying the same, right?</p>	<p style="text-align: right;">Page 160</p> <p>1 The reason I cited this is 237, and the reason,  2 the next thing, Littman is another additional 100  3 people. And if you, if you read closely some of the  4 references in this particular article, there is  5 Exposito-Campos' article talking about subreddit and the  6 number of people who were discussing detransition.  7 So what I'm saying if WPATH is responsible for,  8 for providing a scientific basis for affirmative care,  9 they must talk about the error rate as represented by  10 detransitioned people. And four years ago we had no  11 idea about the, the rate of detransitioned people and  12 today we have two studies that have been published from  13 the UK that begin to give us a rate of detransition.  14 And so to me you are making the wrong point and  15 that I have not been in error. You just have  16 misunderstood the difference of why I cited these  17 particular papers. These particular papers just  18 demonstrate that detransition is a real problem and, and  19 it is a moral and ethical and scientific problem. And  20 that WPATH if it's going to deal with the science of  21 transition, it has to deal with the error rates and what  22 happens to people who detransition, you see. And so I  23 don't, I don't have nothing more to say about that, I  24 just think your point is quite irrelevant.  25 Q. Okay. Well, I'm going to continue to ask you</p>
<p style="text-align: right;">Page 159</p> <p>1 A. Yes, I can answer to your question, correct.  2 Q. Okay.  3 A. But it doesn't mean that -- I think you're  4 missing the point. And, and by, by having me say yes,  5 that it doesn't quantify the incidents of detransition,  6 it's missing the point.  7 Q. I understand that, Dr. Levine. But if your  8 point was, if your point in your report was detransition  9 is a thing and here are the psychological supports that  10 these people need, that's what you should have written,  11 but that's not what you wrote. You wrote that a growing  12 number of young people regret transition and wish to  13 reverse it.  14 So my question to you about the article you rely  15 on for that contention is, this article doesn't say  16 that, this article is not a study of the growing numbers  17 or small or diminishing numbers or staying the same  18 numbers of people who detransitioned. That's what I'm  19 asking you to confirm.  20 A. What I am confirming is that this particular  21 paper talks about 237 people who have detransitioned and  22 that WPATH has no serious discussion of detransition,  23 there's no chapter on this, on this phenomenon which is  24 extremely relevant to the care of transgender people,  25 especially transgender young people.</p>	<p style="text-align: right;">Page 161</p> <p>1 about evidence that you cite in your report that you use  2 as support for assertions you're making, so I'm just  3 going to flag that for you now. And again, this --  4 let's actually, let me, let me just ask one more time.  5 This study does not speak to the numbers of people who  6 have detransitioned now as opposed to any other time in  7 history, right?  8 A. As far as I remember this paper, the answer to  9 your question is right.  10 Q. Sorry, the answer to my question is -- okay,  11 right, okay. So let's actually now that you mention it,  12 let me just pull up really quickly the Littman study  13 that you mentioned.  14 (Exhibit 15 marked for identification.)  15 Q. This will be Exhibit 15.  16 A. Okay.  17 Q. Okay.  18 MR. CHARLES: So for the record, I'm  19 showing Dr. Levine what has been marked as SL15,  20 "Individuals treated for gender dysphoria with medical  21 and/or surgical transition who subsequently  22 detransitioned, a survey of 100 detransitioners by Lisa  23 Littman, received," well, published online 19 October  24 '21.  25 Q. Okay. So looking at the abstract again, the</p>



<p style="text-align: right;">Page 162</p> <p>1 first sentence, "The study's purpose was to describe a 2 population of individuals who experienced gender 3 dysphoria, chose to undergo medical and/or surgical 4 transition, and then detransitioned by discontinuing 5 medications, having surgery to reverse the effects of 6 transition, or both. Recruitment" -- oh, wait, let me 7 stop there, just a second. And then the last sentence 8 of the abstract -- oh, wait, hang on. So then actually 9 if you'll look please to page -- okay, go to two pages 10 down, Dr. Levine, it's going to be numbered Page 3355 in 11 the upper right-hand corner. 12 A. Okay, I'm on the page. 13 Q. Okay. In the left-hand corner the paragraph 14 starts on that page with, "Individuals," but I'm going 15 to start reading from the second to last sentence. It 16 begins, "This study does not describe the population of 17 individuals who undergo medical or surgical transition 18 without issue, nor is it designed to assess the 19 prevalence of detransition as an outcome of transition. 20 Instead, the goal was to identify detransition reasons 21 and narratives in order to inform clinical care and 22 future research." 23 So again, my question here, Dr. Levine, is this 24 study by design and by the admission of Lisa Littman is 25 not about assessing the prevalence of detransition or</p>	<p style="text-align: right;">Page 164</p> <p>1 introduce another exhibit here, Dr. Levine. 2 (Exhibit 16 marked for identification.) 3 A. It hasn't yet appeared. 4 Q. I think this one is a larger file, so it's 5 taking a minute. 6 A. Do we already have that one? 7 Q. Not that I'm aware of, "The endocrine treatment 8 guidelines"? 9 A. Oh, no, I'm sorry, I highlighted something in 10 error. 11 Q. Okay. 12 MR. CHARLES: So for the record, I'm 13 showing Dr. Levine what has been marked as Exhibit SL16 14 entitled, "Endocrine treatment of gender 15 dysphoric/gender incongruent persons and Endocrine 16 Society clinical practice guideline." 17 Q. Okay. So I know the answer to this question, 18 Dr. Levine, but I have to ask. You have seen this 19 document before, correct? 20 A. I have. 21 Q. Okay. And this is the Endocrine Society's 22 clinical practice guideline which was published in 2017, 23 right? 24 A. Yes. 25 Q. Okay. On Page 51 of your report when you're</p>
<p style="text-align: right;">Page 163</p> <p>1 whether or not the numbers of detransitioners are 2 growing, right? 3 MR. DAVID: Objection to form. 4 A. You know, I, I don't know if I should just 5 repeat what I said before. Detransition is a 6 phenomenon, science is only now beginning to get, we 7 have two studies that were published within the last I 8 think four months or five months. 9 Q. Okay. So, Dr. Levine, are you refusing to 10 answer my question because -- 11 A. Not at all, I'm answering your question, I'm 12 answering. 13 Q. No, you're not. 14 A. Well, then ask me the question again. I'm 15 sorry, I apologize. You want to confine me to an answer 16 and so, so set me up for the answer you want, please. 17 Q. Okay. What I'm asking is, this sentence by the 18 admission of the author was not designed to assess the 19 prevalence of detransition? 20 A. That's true. 21 Q. Okay. Instead the purpose of this study was to 22 identify detransition reasons and narratives in order to 23 inform clinical care and future research, right? 24 A. Correct. 25 Q. Okay. Thank you. Okay. Let's, I'm going to</p>	<p style="text-align: right;">Page 165</p> <p>1 discussing these guidelines you wrote that, "The 2 guidelines were based on two systematic reviews which 3 also found the evidence for hormonal use to be of very 4 low and low quality, which translates to low confidence 5 in the balance of risk and benefits." I can show you 6 that in your report if you'd like to confirm that's the 7 case, but I'll represent to you I just read it from 8 Paragraph 104. 9 A. That's sufficient. 10 Q. Okay. So looking at Page 3873 of the endocrine 11 guidelines exhibit. 12 A. Okay, I am on that page. 13 Q. Okay. There's a heading on the bottom left 14 corner entitled, "Commissioned systematic review." Do 15 you see that there in the lower left corner? 16 A. Yes. 17 Q. Okay. So starting, let's see. I could read you 18 this entire paragraph, but I'm going to skip it and just 19 go to the sentence that begins with, "However." It's 20 the last word, second to last word at the bottom of that 21 paragraph that says, "However, the," and then it goes to 22 the top of that next column on the right-hand side 23 beginning with, "Quality," do you see that? 24 A. Yes. 25 Q. Okay. So it says, "However, the quality of</p>

<p style="text-align: right;">Page 166</p> <p>1 evidence was low. The second review summarized the  2 available evidence regarding the effect of sex steroids  3 on bone health in transgender individuals and identified  4 13 studies. In transgender males there was no  5 significantly, no statistically significant difference  6 in the lumbar spine, femoral neck, or total hip BMD at  7 12 and 24 months compared with baseline values before  8 initiating masculinizing hormone therapy.  9 "In transgender females there was a  10 statistically significant increase in lumbar spine BMD  11 at 12 months and 24 months compared with baseline values  12 before initiation of feminizing hormone therapy. There  13 was minimal information on fracture rates. The quality  14 of evidence was also low."  15 So I understand these to be the two systematic  16 reviews that the committee commissioned. You described  17 them in your report to be of very low and low quality,  18 but I'm only seeing low and low. Were you, were you  19 referring to something else for that very low reference?  20 A. I think I was referring to the things that I  21 participated in and, and reading reports from the  22 countries that I've already initiated, made reference  23 to. And also the fact that I think I've seen reports  24 and perhaps I've quoted some in this, in this, my expert  25 witness report that had been done since 2017. And if</p>	<p style="text-align: right;">Page 168</p> <p>1 based clinical practice guidelines," on the lower  2 right-hand side of the, of the column on the right.  3 A. Yes.  4 Q. Okay. So beginning with, let's see. Okay.  5 About the middle of that paragraph there's a sentence  6 that begins, "In terms of the strength."  7 A. "In terms of the strength of the recommendations  8 strong represents," okay.  9 Q. Yes. Do you see that there?  10 A. Yes.  11 Q. Also can you, are you having any trouble hearing  12 me? There's some construction happening outside my  13 window.  14 A. No. I hear the construction, but I hear you  15 fine.  16 Q. Okay. "In terms of the strength of the  17 recommendation, strong recommendations use the phrase  18 'we recommend' and the number 1, and weak  19 recommendations use the phrase 'we suggest' and the  20 number 2. Cross filled circles indicate the quality of  21 the evidence such that," and I'm just describing what I  22 see for the record because it's a figure, "Cross filled  23 circles indicate the quality of evidence such that one  24 circle with a cross in it and three empty circles  25 denotes very low quality evidence; two circles with</p>
<p style="text-align: right;">Page 167</p> <p>1 this is published in 2017, it probably was done in 2016.  2 And so some of these, you know, I guess -- well, I'm  3 trying to think about what you're really asking me.  4 You're asking me the difference between very low and low  5 or --  6 Q. No, not the difference, Dr. Levine, just that  7 this is a citation here for, for that assertion is the,  8 is the guidelines. And so I, I'm seeing these two  9 systematic reviews to be low and low, not very low. So  10 I'm trying to figure out if that was a typo or what,  11 what that was referring to from your report.  12 A. Mr. Charles, I think I cannot, I cannot say that  13 this is a typo or it was not a typo.  14 Q. Okay.  15 A. I just don't know.  16 Q. All right.  17 A. At the moment.  18 Q. Okay. Let's, let's go to page, let's go to  19 Page 3872, yes, of the Endocrine Society guidelines.  20 A. 3872, I bypassed it here.  21 Q. This page number for some reason is in the upper  22 left-hand corner.  23 A. Yeah, okay.  24 Q. Okay. So starting, or I should say if you will  25 look, please, at "The method of development of evidence</p>	<p style="text-align: right;">Page 169</p> <p>1 crosses in them and two circles without, low quality;  2 three circles with crosses in them and one circle  3 without, moderate quality; and four circles all with  4 crosses in them, high quality."  5 MR. CHARLES: Kelley, does that make sense?  6 A. I understand.  7 COURT REPORTER: Got it.  8 Q. Thanks, Dr. Levine. I just want to make sure  9 the court reporter gets what I'm saying.  10 MR. CHARLES: Kelley, does that make sense?  11 COURT REPORTER: I got it, yes.  12 Q. Okay. "The task force has confidence that  13 persons who receive care according to the strong  14 recommendations will derive on average more benefit than  15 harm. Weak recommendations require more careful  16 consideration of the person's circumstances, values and  17 preferences to determine the best course of action."  18 Okay. You followed me there, Dr. Levine?  19 A. Yes.  20 Q. Okay. So your report says at Page 52,  21 Paragraph 104 -- so, so let me back up here a little  22 bit. Let's take a look at your report, I think that  23 will be helpful. If you'll go to Page 52 of Exhibit 1.  24 A. Wait a second here, I, I got lost. All right.  25 Page 52?</p>

<p style="text-align: right;">Page 170</p> <p>1 Q. That's correct. At Paragraph 104 which starts 2 at the bottom of 51 and spills over to 52. 3 A. I'm here. 4 Q. Okay. So about the middle of that paragraph 5 there's a sentence you wrote that starts, "The 6 guidelines' authors," do you see that? 7 A. Not yet. "The guidelines' authors," yeah, "had 8 this to say," yeah. 9 Q. That's it, yes, "The guidelines' authors have 10 this to say about what differentiates a weak 11 recommendation from a strong one. The task force has 12 confidence that persons who receive care according to 13 the strong recommendations will derive on average more 14 benefit than harm. Weak recommendations require more 15 careful consideration of the person's circumstances, 16 values and preferences to determine the best course of 17 action. In other words, the Endocrine Society is saying 18 we cannot be sure that on average the benefits of 19 administering hormonal interventions will outweigh the 20 harm for either adults or children." 21 Okay. So going back to the Endocrine Society 22 guidelines, I'm trying to figure out here, I'm reading 23 that, "Weak recommendations require more careful 24 consideration of the person's circumstances, values and 25 preferences to determine the best course of action."</p>	<p style="text-align: right;">Page 172</p> <p>1 don't know if there are any recommendations that contain 2 four circles that are filled in in that document, they 3 mean that they think that it's very clear that their, 4 the harm risk is going to be low. 5 Now I don't, and I think, I think what the 6 Endocrine Society is saying that, and they said this in 7 2009 and they said it again eight years later, more 8 research is necessary to increase the confidence that 9 the expected benefits will actually occur. That kind of 10 research has never really been done, there's not been 11 controlled studies, there have not been careful 12 follow-up studies. And, and now that we have some 13 detrainers, we don't know what level of certainty 14 that the doctor who put the person on hormones or, put 15 the person on hormones had, you see. 16 I think generally speaking the practitioners who 17 follow these guidelines do not appreciate the nuances 18 that these, that the committee has said about when 19 there's one circle filled in, two circles filled. They 20 just think that this is all, the Endocrine Society has 21 recommended hormones. And so when you look very closely 22 at what the Endocrine Society said, they are aware of 23 the scientific limitation and nonetheless they believe 24 that these were important things to do, even though 25 scientifically they're not sure, they're not very</p>
<p style="text-align: right;">Page 171</p> <p>1 I'm wondering where in the guidelines it says what you 2 wrote in your report, which is that, "They cannot 3 determine on average the benefits of administering 4 hormonal interventions will outweigh the harm for either 5 adults or children"? 6 A. For weak recommendations? 7 Q. Yeah. So -- 8 A. I'm quoting, I thought I'm quoting what you just 9 read for me from the guidelines. I don't understand 10 your question. 11 Q. Okay. Sorry. So look, look at the last 12 sentence in your paragraph of 104. 13 A. "This is indeed a sobering notion"? 14 Q. No, the second to last sentence actually. 15 A. "The Endocrine Society is saying we cannot be 16 sure on average the benefits of administering hormonal 17 interventions will outweigh the harm for either adults 18 or children." 19 Q. Yeah. So the, I see the reference to benefit 20 and harm in the strong recommendation explanation, but I 21 don't see that in the weak recommendation explanation, 22 so I'm trying to figure out where your other words are 23 coming from. 24 A. Well, you have me very confused. It seems to me 25 the, if there is four circles that are filled in, and I</p>	<p style="text-align: right;">Page 173</p> <p>1 certain about whether the benefits outweigh the risk and 2 whether the risks are measured in short-term or in 3 long-term. 4 And, you know, from a scientific point of view, 5 hormones starting with children then, then with 6 adolescents then leading to a lifelong hormone treatment 7 in terms of cardiovascular, lipid problems, diabetes, 8 weight gain and all the things that we, and blood clots, 9 all the things that we know that happened at, at, to 10 adults. These studies, these studies are very 11 short-term studies. And, and so the Endocrine Society 12 is aware of the scientific follow-up limitations and 13 therefore they don't have these strong recommendations. 14 And, and I just think as a physician I'm aware that when 15 we, when we do these affirmative care, what we're really 16 talking about is the impact on the rest of the person's 17 life. And you may or may not know that there is some 18 pretty convincing evidence that on average the life 19 expectancy of -- 20 Q. Okay, okay, Dr. Levine, hang on. What I'm 21 asking is the, the, you quote the guidelines from the 22 portion that I just read that describes the meaning of 23 the strong recommendation versus the weak 24 recommendation. The strong recommendation says that 25 clinicians are -- sorry, "The task force who created the</p>

<p style="text-align: right;">Page 174</p> <p>1 guidelines has confidence that persons who receive care  2 according to the strong recommendation will derive on  3 average more benefit than harm." The following sentence  4 says, "Weak recommendations require more careful  5 consideration of the person's circumstances, values and  6 preferences to determine the best course of action."  7 That sentence does not say weak recommendations mean  8 that we're, mean that so and so is going to derive more  9 harm than benefit or so and so, we're not sure if  10 they're going to derive more harm than benefit. It says  11 there, "Weak recommendations require more careful  12 consideration of the person's circumstances, values and  13 preferences to determine the best course of action." So  14 my question is, where are you getting that weak  15 recommendations mean what you are saying it means in the  16 second to last sentence of your report?  17 A. Because I interpret that sentence, which we  18 agree upon, you see. What, what that sentence really  19 means to me, Mr. Charles, is that science cannot answer  20 the question because we haven't done the appropriate  21 studies and there is this issue of the long-term  22 consequences. So reading our sentences, reading my  23 reports we should, we're not, we don't have, we don't  24 have to rest on science now, science can't help you,  25 what can help you is what the patient prefers, what the</p>	<p style="text-align: right;">Page 176</p> <p>1 do you have or can you point to that that's how people  2 are interpreting it?  3 A. I read Dr. Karasic's report and when --  4 Q. Where in his report does he say that?  5 A. Right now I don't have it, I don't know. But  6 I'm telling you that I've had a lot of experience and,  7 and it -- I, I forget the number of pages this Endocrine  8 Society thing is, is it 40 pages, something like that,  9 it's a long document. And so it's asking, it's asking  10 me, too much of me to, to say, to point to one paragraph  11 or one sentence and say is there any, is this, is this  12 what the basis of my conclusions are.  13 And given the fact that it's really hard, you've  14 now presented 16 documents to me, many of them, you  15 know, I read at one point in my life, in the last six  16 months. And when, when I think of people who are not as  17 academic and interested and they're just wanting to do,  18 to provide care, they don't really read these reports  19 and they don't appreciate the subtleties that you're  20 making reference to. And it, it seems very clear to me  21 that the average professional who's giving hormones is  22 not very well acquainted. They often say, at least in  23 testimonies they often say, well, I follow the Endocrine  24 Society or I follow WPATH, and they don't really know  25 the details of --</p>
<p style="text-align: right;">Page 175</p> <p>1 doctor's values are and what the patient's values are.  2 Q. Okay. So, Dr. Levine, that's your  3 editorializing, it's not based on what the, what the,  4 what the actual words of the guidelines are saying.  5 A. Well, you know, every reader, especially every  6 professional reader integrates the scientific or these  7 consensus documents with his own values and personal  8 clinical experiences and what he knows in terms of other  9 data. And so even though you say it's my personal  10 interpretation, I, I don't want that to be demeaned.  11 Lots of people --  12 Q. I'm not, I'm not demeaning it at all, Dr.  13 Levine. I'm just making sure that you and I are reading  14 the same words from the guidelines and that you aren't  15 quoting something that I'm not seeing from the  16 guidelines, that's what I mean, I'm not demeaning your  17 professional experience at all.  18 A. Right. Well, thank you for that.  19 Q. So let me, let me ask one follow-up. You said  20 that you thought some people read these recommendations,  21 some, some clinicians read them and said, oh, the  22 Endocrine Society is recommending hormones and without  23 any, without any nuance or, or without really say  24 understanding the various, in my view, pretty, pretty  25 nuanced things that this guideline says. What evidence</p>	<p style="text-align: right;">Page 177</p> <p>1 Q. Well, I understand, I understand that.  2 A. That's my opinion and that's my, that's my  3 impression.  4 Q. Okay, okay. So let me, let me, let me help,  5 let's have a look at some other guidelines here really  6 quickly.  7 A. I'm sorry, am I supposed to be doing something  8 now?  9 Q. I'm just waiting on an exhibit to load, so it  10 might be visible now to you, it's Exhibit 17.  11 (Exhibit 17 marked for identification.)  12 A. Okay. Oh, yeah.  13 Q. Okay. So does that mean you see it?  14 A. I see it.  15 MR. CHARLES: All right. So for the  16 record, I'm showing Dr. Levine what has been marked as  17 Exhibit SL17, the document entitled, "Pediatric obesity,  18 assessment, treatment and prevention, Endocrine Society  19 clinical practice guideline."  20 I'll represent to you, Dr. Levine, this was  21 published, well, the copyright says -- oh, no, it does  22 say, "First published online, 31 January 2017," so  23 approximately the same year as the guidelines we just  24 looked at. Scroll please to Page 712.  25 A. 712 of a 49-page document.</p>

<p style="text-align: right;">Page 178</p> <p>1 Q. Oh, no, yeah, sorry. So the, that will be 712, 2 page number is in the upper left-hand corner. 3 A. I have it, I have it, Mr. Charles. 4 Q. Okay. So was that, were you making a joke? 5 A. No, I was just saying I notice that it's a 6 41-page document. 7 Q. Oh, okay, gotcha. 8 A. This is in keeping with what I said about the 9 human mind's capacity to keep 41 pages in mind. 10 Q. I see. So kind of a joke. 11 A. No, it's just, I'm just making reference to my 12 prior point about -- 13 Q. That's okay, that's all right, moving on. At 14 the bottom of 712, "Method of development of evidence 15 based clinical practice guidelines." 16 A. Yes. 17 Q. It's on the left-hand column just a few 18 sentences up from the bottom. 19 A. Yeah, I got it. 20 Q. Okay. So starting there. Actually, let's see 21 here. I'm going to start actually in the column on the 22 right, the first paragraph. I'm looking at the sentence 23 that begins, "In terms of the strength of a 24 recommendation." 25 A. Yes, it looks like it's the same language as the</p>	<p style="text-align: right;">Page 180</p> <p>1 Q. Okay. And then the second bullet point there 2 is, "Encouraging the consumption of whole fruits rather 3 than fruit juices." And that recommendation there is a 4 one which is a strong, one denotes strong, a strong 5 recommendation, right, that's a sure understanding from 6 the graded scale? 7 A. No, actually I think two, two filled in circles 8 is low. 9 Q. Oh, I understand that, Dr. Levine. I'm saying 10 there are -- do you see the corresponding numbers next 11 to the circles? 12 A. Yes. 13 Q. So those reflect either a, always a one or a 14 two? 15 A. I see. 16 Q. Okay. And the one or the two, a one denotes a 17 strong recommendation and the two denotes a weak 18 recommendation. I can show you that in what we, do you 19 want to see that or do you just want to -- 20 A. No, no, I trust you. 21 Q. Okay. 22 A. But what we have here is a one which is the 23 Endocrine Society is strongly recommending using whole 24 fruits rather than these derivatives that were discussed 25 in the previous paragraph.</p>
<p style="text-align: right;">Page 179</p> <p>1 previous. 2 Q. It is, yeah. I will represent to you, Dr. 3 Levine, this is identical language that is both in the 4 guidelines we just looked at and in your report. 5 A. Yes. 6 Q. Do you want me to read it to be sure out loud? 7 A. No, I trust you, Mr. Charles. 8 Q. Okay. So these, I point that out to you to say 9 that this language and the explanation of the strength 10 of the recommendation is used in more than one guideline 11 from the Endocrine Society. Does that appear to be the 12 case here to you? 13 A. Yes. 14 Q. Okay. So then please scroll up to Page 710 and 15 look at, there's a title about the middle of the page, 16 "Prevention of obesity, 3.0, prevention of obesity." 17 A. Okay. 18 Q. So looking at 3.2, "We recommend that clinicians 19 prescribe and support healthy eating habits, such as 20 avoiding the consumption of calorie-dense, nutrient-poor 21 foods; e.g., sugar sweetened beverages, sports drinks, 22 fruit drinks, most fast foods or those with added sugar 23 or added table sugar or high fructose corn syrup, high 24 fat or high sodium processed foods." 25 A. Yes, I read it, I see it.</p>	<p style="text-align: right;">Page 181</p> <p>1 Q. Correct. 2 A. And they evaluate the evidence for their strong 3 recommendation as very low. 4 Q. I think two, so two circles is actually low and 5 one circle is very low, so this -- 6 A. I'm sorry, I misspoke, it's low. 7 Q. Yeah. 8 A. So the science is low, but the recommendation is 9 strong. 10 Q. Correct. 11 A. And therefore the discrepancy between the low 12 science and the strong recommendation must be based on 13 other things, which was probably consensus 14 reasonableness, it's the intuitive sense of 15 reasonableness. 16 Q. Right. 17 A. So we have a very strong recommendation even 18 though the science trails the recommendation 19 significantly. 20 Q. And so you described that as a, well, you just 21 said something there, you said something about 22 reasonableness, so they can make a strong recommendation 23 with low quality of evidence because of something else, 24 did you say what that something else was? 25 A. Well, it's their current sense of, of what's</p>



<p style="text-align: right;">Page 182</p> <p>1 reasonable. They believe even though the science is  2 lacking that it makes sense to eat whole fruit rather  3 than sugar derived, you know, commercially derived  4 sweet, sweet, the fruit juices.  5 Q. Okay.  6 A. So it's, it's, it's recognizing the discrepancy  7 between the lack of scientific evidence and our current  8 beliefs about this. So No. 1 is a belief system and the  9 circles are a science system.  10 Q. Well, I don't know that I would agree with that  11 description. Let's see, I'm going to go back and look.  12 It says, if you go back to the method of development of  13 evidence based clinical practice guidelines on Page 712  14 where we just were.  15 A. Okay.  16 Q. "The, the task force used the best available  17 research evidence to develop the recommendations." So I  18 don't, I don't know that, what I would represent to you  19 is that the guidelines are saying that the, that the  20 recommendations are developed through research evidence,  21 not, not separate, not based on a belief system.  22 A. Mr. Charles, if you were correct, if you were  23 correct the circles would be all filled in, all four of  24 them.  25 Q. No, no, Dr. Levine, hang on. You're, you're</p>	<p style="text-align: right;">Page 184</p> <p>1 the recommendations, nonetheless they recommend it  2 because their best judgment is this is a very smart  3 thing to do, and that's judgment, that's all.  4 Q. Dr. Levine, I need to, the second sentence says,  5 or the sentence about the cross filled circles says,  6 "Cross filled circles indicate the quality of the  7 evidence."  8 A. Yes, the quality of the evidence is low.  9 Q. Yeah, but you said the, you said the development  10 of recommendations -- or I'm sorry. You said the, that  11 recommendations were based on a belief that the task  12 force has as opposed to the best available research  13 evidence which is what they just said, which is what I  14 just read to you, do you see that?  15 A. The best available research evidence --  16 Q. To develop the recommendations, so it's not --  17 A. -- is of low quality, they wish they had higher  18 quality evidence to make the recommendation, but  19 nonetheless, for other reasons they make the  20 recommendation.  21 Q. Okay. But I just, I need, I, what I'm asking is  22 you are not offering an opinion that the recommendations  23 are based on subjective beliefs, because this sentence  24 says the task force used the best available research  25 evidence. Answer this and then we'll move on, I, I, I</p>
<p style="text-align: right;">Page 183</p> <p>1 misunderstanding the distinction here. Are you on  2 Page 712?  3 A. Yes.  4 Q. Okay. So at the, at the top of the right-hand  5 column, first paragraph, basically the second sentence  6 on that page, or on that column, excuse me, says, "The  7 task force used the best available research evidence to  8 develop the recommendations. The task force also used  9 consistent language, graphical descriptions of both the  10 strength of a recommendation and the quality of  11 evidence. In terms of the strength of a recommendation,  12 strong recommendations use the phrase 'we recommend' and  13 the number 1; and weak recommendations use the phrase  14 'we suggest' and the number 2."  15 A. Mr. Charles, you have not convinced me that I'm  16 wrong.  17 Q. I'm not trying to convince you that you're  18 wrong.  19 A. I don't agree with you, I don't agree with you.  20 I understand that the Endocrine Society is making a  21 strong recommendation to encourage the use of whole  22 fruits in the diet instead of fruit drinks, but the fact  23 that they have four circles and they only fill in two,  24 they after reviewing the science they recognize that  25 there isn't a scientific enormous strength in this, in</p>	<p style="text-align: right;">Page 185</p> <p>1 just, I'm just trying to understand, you're not saying  2 that people are pulling their beliefs out of nowhere,  3 this, this --  4 A. No, no, I'm not saying they're pulling their  5 beliefs out of nowhere. But I am also not denying that  6 subjective beliefs play, don't play a role. If, if I  7 believe that the science dictated the policy, I think  8 you would see and you would be very pleased to see four  9 circles filled in.  10 Q. Okay. So you, you understand the sentence I'm  11 referring to, "The task force used the best available  12 research evidence to develop the recommendations"?  13 A. Yes, that's what they, yes, I understand that.  14 Q. All right. Dr. Levine, let's take a quick  15 break, we'll come back at 3:36.  16 MR. CHARLES: Kelley and Kraig, let's go  17 off the record. Sorry, I should have said that first.  18 VIDEO TECHNICIAN: We're off the record at  19 3:31 p.m.  20 (A break was taken at 2:31 p.m.)  21 VIDEO TECHNICIAN: This is media No. 6 in  22 the deposition of Dr. Stephen Levine. Today is  23 April 27, 2022. We're going back on the record at  24 3:39 p.m.  25 BY MR. CHARLES:</p>

<p style="text-align: right;">Page 186</p> <p>1 Q. So, Dr. Levine, we were reviewing the pediatric 2 obesity guidelines from the Endocrine Society and 3 talking about how it's possible to have a strong 4 recommendation with low quality evidence. And so my 5 question is that the phenomena of strong recommendations 6 with low quality evidence is not something that is 7 limited to Endocrine Society guidelines for the 8 treatment of gender dysphoria, that is something that is 9 evidenced at least in one other guideline, and I would 10 argue more, but at least in this other guideline I've 11 showed you?</p> <p>12 A. I'm sorry, is that a question or is that a 13 comment?</p> <p>14 Q. Yeah. So, so let me rephrase. So the phenomena 15 of a high recommendation, a strong recommendation with 16 low quality evidence is not a phenomena limited to the 17 pediatric, to the Endocrine Society guidelines to the 18 treatment of gender dysphoria?</p> <p>19 A. Yes, as you know, either you nor I are an expert 20 in the medical care of obesity, but obesity is a well 21 known problem, especially in young people, that has an 22 outcome that is adverse. And, and so what may be a 23 strong recommendation with low quality evidence for 24 something that is known to cause osteoporosis, diabetes, 25 shortened life expectancy, low self-esteem, depression</p>	<p style="text-align: right;">Page 188</p> <p>1 report, Exhibit 1, let's go to Page 50.</p> <p>2 A. Okay, I'm on Page 50.</p> <p>3 Q. Okay. And looking at Paragraph 102. 102 is at 4 the bottom of Page 50.</p> <p>5 A. I'm looking at it.</p> <p>6 Q. Okay, great. It says right there that, "The 7 public health authorities in Sweden and Finland have 8 done systematic reviews of evidence of gender affirming 9 interventions with the focus on youth and both came to 10 the same conclusion as the systematic reviews above. 11 The evidence of benefit was found to be unconvincing." 12 So for this contention you cite to, the footnote there 13 is first footnote 163 and footnote 164, do you see that 14 at the bottom?</p> <p>15 A. Yes.</p> <p>16 Q. Okay. So let me introduce another exhibit. So 17 the first, I'm going to be asking you a question about 18 the first citation there which says the title is, 19 "Gender affirmation surgery for gender dysphoria, 20 effects and risks, health technology assessment review 21 2018, Swedish Health Authority published online 2018," 22 and then there's a Web address there, do you see that, 23 much of which is like digits?</p> <p>24 A. Yes, I see it. Are you going to, is that going 25 to be an exhibit?</p>
<p style="text-align: right;">Page 187</p> <p>1 and, and premature death from various cardiovascular 2 diseases is a separate kettle of fish from taking a 3 biologically healthy person who has psychological --</p> <p>4 Q. Okay, okay, Dr. Levine, not my question. My 5 question is, it is possible, we have, I have just showed 6 you evidence that the phenomena of a strong 7 recommendation with low quality evidence from the, from 8 the Endocrine Society is not something limited to the 9 guidelines for the treatment of gender dysphoria, it's 10 something that exists in other treatment guidelines from 11 the Endocrine Society, right?</p> <p>12 A. If you want me to answer that question right, I 13 can answer right, but please note that I'm making a 14 distinction between some well recognized thing that --</p> <p>15 Q. I understand, Dr. Levine. I'm not making that 16 distinction, I'm showing you two sets of guidelines and 17 I'm asking, that phenomena is not limited to one, it's 18 evident in both of those guidelines?</p> <p>19 A. And if you noticed, I've already answered you 20 you, you once.</p> <p>21 Q. Well, you said no and then you kept talking. So 22 what I need to ask is just answer my question, please.</p> <p>23 A. If I just answer your question, the answer is 24 correct.</p> <p>25 Q. Okay. Thank you. So looking back at your</p>	<p style="text-align: right;">Page 189</p> <p>1 Q. Yes, mm-hmm.</p> <p>2 A. All right. I'll turn to the exhibit page.</p> <p>3 Okay. So that will be 18 when it's on?</p> <p>4 Q. Yes, correct.</p> <p>5 (Exhibit 18 marked for identification.)</p> <p>6 A. It's on, okay.</p> <p>7 Q. Okay. So when I went to try to find that 8 citation I copied and pasted that link in entirety I'll 9 represent to you about six times and each time this is 10 what I, this, this exhibit is what I received. So have 11 you, I mean, was this a document that you reviewed?</p> <p>12 A. I must have reviewed it at some time.</p> <p>13 Q. Okay. Do you remember what the document looked 14 like?</p> <p>15 A. No.</p> <p>16 Q. Okay. So the second footnote -- I'm going to 17 introduce another exhibit.</p> <p>18 (Exhibit 19 marked for identification.)</p> <p>19 A. Now come on, where am I here, what have I done.</p> <p>20 Q. The exhibit is loading, but it is a large file.</p> <p>21 It should be available now.</p> <p>22 A. I'm, I'm again having trouble with getting lost 23 and I'm now on a previous exhibit and I can't get back 24 to my general screen.</p> <p>25 Q. Okay.</p>

<p style="text-align: right;">Page 190</p> <p>1 A. Let me see what I can do here. I'm on</p> <p>2 Exhibit 14 and I'm going to refresh. When I refresh I</p> <p>3 get the same thing, I go forward, nothing happens, go</p> <p>4 backwards, nothing happens.</p> <p>5 Q. Okay.</p> <p>6 MR. CHARLES: Kraig, let's go off the</p> <p>7 record real quick.</p> <p>8 VIDEO TECHNICIAN: We're going off the</p> <p>9 record at 3:47 p.m.</p> <p>10 (A break was taken at 2:47 p.m.)</p> <p>11 VIDEO TECHNICIAN: We're going back on the</p> <p>12 record at 3:47 p.m.</p> <p>13 MR. CHARLES: Okay. For the record, I'm</p> <p>14 showing Dr. Levine what has been marked as SL19.</p> <p>15 BY MR. CHARLES:</p> <p>16 Q. So, Dr. Levine, this is a document that came up</p> <p>17 when I looked for --</p> <p>18 A. All right. So this probably, I, I didn't</p> <p>19 realize that my reference was to a Swedish document. I</p> <p>20 have seen a translation of this document, I gave you the</p> <p>21 wrong reference, I'm sorry.</p> <p>22 Q. Okay. So this, this is actually Finnish I</p> <p>23 learned.</p> <p>24 A. Oh, Finnish?</p> <p>25 Q. Yes. This, this is I believe --</p>	<p style="text-align: right;">Page 192</p> <p>1 not completely banned all medical interventions, right,</p> <p>2 they're just adjusting them?</p> <p>3 A. That's correct, you're correct.</p> <p>4 Q. And then are you aware of the Cass review?</p> <p>5 A. Yes.</p> <p>6 Q. That the UK is doing?</p> <p>7 A. Yes.</p> <p>8 Q. Okay. And, and as a part of that review you're</p> <p>9 aware that the, that the national, what do they call it,</p> <p>10 the National Health Service acknowledges that some</p> <p>11 children do experience gender dysphoria and will need</p> <p>12 clinical support and interventions?</p> <p>13 A. Yes.</p> <p>14 Q. Okay.</p> <p>15 A. That's the clinical perception around many</p> <p>16 people, yeah.</p> <p>17 Q. Okay. All right. Let's take a look, hopefully</p> <p>18 you still have it up, Page 51 of your report,</p> <p>19 Paragraph 103.</p> <p>20 A. Getting there. Okay, I'm here.</p> <p>21 Q. Okay. So in Paragraph 103 you're talking about</p> <p>22 a review by Professor, excuse me, Professor Carl</p> <p>23 Heneghan, the editor of the British Medical Journal.</p> <p>24 And the citation provided to that review is at the end</p> <p>25 of the paragraph, do you see that, footnote 165?</p>
<p style="text-align: right;">Page 191</p> <p>1 A. This is --</p> <p>2 Q. Well, let me just ask you, Dr. Levine, you don't</p> <p>3 speak Finnish, do you?</p> <p>4 A. I'm an American, which means I have one</p> <p>5 language.</p> <p>6 Q. Okay. Okay.</p> <p>7 A. I only speak English.</p> <p>8 Q. Okay. Are you saying you have read a</p> <p>9 translation of this document at some point?</p> <p>10 A. Yes.</p> <p>11 Q. And do you know if it was an official</p> <p>12 translation, a certified official translation?</p> <p>13 A. I don't know if it was a certified one. I think</p> <p>14 I, I accessed it through SEGM.</p> <p>15 Q. Okay. All right. Let's go, let's go back to</p> <p>16 your report, Exhibit 1.</p> <p>17 A. God, I'm having the same damn problem again.</p> <p>18 All right. Exhibit 1, I'm going to get there. All</p> <p>19 right, here I am.</p> <p>20 Q. Okay. And you, you said earlier that the UK was</p> <p>21 also changing some of their guidelines with regard to</p> <p>22 medical interventions for the treatment of gender</p> <p>23 dysphoria, right?</p> <p>24 A. Yes.</p> <p>25 Q. Give me just a second here. But the UK has also</p>	<p style="text-align: right;">Page 193</p> <p>1 A. Yeah.</p> <p>2 Q. Okay. And again, this is, this is the kind of</p> <p>3 review we talked about earlier, right, not a committee</p> <p>4 of scientific researchers doing a systematic review of</p> <p>5 the literature, but rather an individual doing their own</p> <p>6 independent look --</p> <p>7 A. Right.</p> <p>8 Q. -- of the available research? Okay. Let me</p> <p>9 just put an exhibit here real quickly.</p> <p>10 (Exhibit 20 marked for identification.)</p> <p>11 Q. Okay. I think that's available. Let me know</p> <p>12 when you can see it.</p> <p>13 A. I'm sorry, is that another exhibit?</p> <p>14 Q. It is, yes, it should be Exhibit 20.</p> <p>15 A. And do you want me to open it?</p> <p>16 Q. Okay.</p> <p>17 A. It's very hard to read, I'll have to --</p> <p>18 Q. Use the zoom function.</p> <p>19 A. Yeah.</p> <p>20 Q. Okay. So the citation you provided to Dr., I'm</p> <p>21 sorry, Professor Carl Heneghan's review, I'll represent</p> <p>22 to you that Exhibit SL20 is a screen shot of that</p> <p>23 citation.</p> <p>24 A. Yeah.</p> <p>25 Q. Entitled, "Gender affirming hormone in children</p>

<p style="text-align: right;">Page 194</p> <p>1 and adolescents." And you can see there that in the  2 title, this is a blog, right?  3 A. Yes.  4 Q. Okay. And it says off to the right there,  5 "Insights and opinions from BMJ EBM's readers, authors  6 and editors," right?  7 A. Mm-hmm, yes.  8 Q. Now I'm going to introduce the blog that I --  9 just a second.  10 (Exhibit 21 marked for identification.)  11 Q. Okay. There's another exhibit, Dr. Levine, if  12 you refresh I think you'll see it. It's Exhibit 21, do  13 you see it yet?  14 A. Mm-hmm, yes, I see it.  15 Q. Okay.  16 MR. CHARLES: So I'm showing Dr. Levine  17 what has been marked as SL21, "Gender affirming hormone  18 in children and adolescents," posted on the 25th of  19 February 2019.  20 Q. And, Dr. Levine, go ahead and scroll to the,  21 there are no page numbers here, so you're just going to  22 have to look for the heading, "Disclaimer."  23 A. Okay. Before we do that, Mr. Charles, I just  24 want to point out that the first chart in this on Page 1  25 shows the question you were sort of implying I didn't</p>	<p style="text-align: right;">Page 196</p> <p>1 strictly at your own risk." Did I read that correctly?  2 COURT REPORTER: Can you slow down when you  3 read, please.  4 MR. CHARLES: Oh, Kelley, I am so sorry.  5 COURT REPORTER: You're fine, just going  6 forward. Thank you.  7 MR. CHARLES: Okay. Kelley, do you want me  8 to read that again more slowly?  9 COURT REPORTER: No, I'm good. I'll get it  10 from the exhibit.  11 MR. CHARLES: My apologies again.  12 BY MR. CHARLES:  13 Q. Okay. Dr. Levine, did I read that correctly and  14 too fast?  15 A. You read it very rapidly and correctly.  16 Q. Okay. All right. So as, as you saw on the  17 disclaimer there, this is not a peer reviewed source,  18 right?  19 A. You see, among in the United States, among the  20 most respected opinion makers are the editors, are the  21 long-standing editors of major medical journals, the New  22 England Journal of Medicine in the United States, for  23 example, and the British Medical Journal and Lancet in  24 the UK.  25 So this disclaimer is, sounds like it was</p>
<p style="text-align: right;">Page 195</p> <p>1 have any strong evidence that there was an increase in  2 the incidents of these problems, and here it is showing  3 you the incidents, it's just another reference to it for  4 the UK GID services.  5 Q. Okay.  6 A. So we wanted to go to what, what section?  7 Q. It's going to be one, two, three, four, five,  8 six, it's if you count down from the first page it's the  9 seventh page as you're scrolling and you're looking for  10 a section entitled, "Disclaimer."  11 A. Okay.  12 Q. Okay. So that section reads, "The views and  13 opinions expressed on this site are solely those of the  14 original authors. They do not necessarily represent the  15 views of the BMJ and should not be used to replace  16 medical advice. All information on this blog is for  17 general information, is not peer reviewed, requires  18 checking with original sources and should not be used to  19 make any decisions about healthcare. No responsibility  20 for its accuracy and correctness is assumed by us and we  21 disclaim all liability and responsibility arising from  22 any reliance placed on such commentary or content by any  23 user or visitor to this Website or by anyone who may be  24 informed of any of its content. Any reliance you place  25 on the material placed on this site is therefore</p>	<p style="text-align: right;">Page 197</p> <p>1 documented, it was put in there for legal purposes. I  2 don't know if other, other blogs have that same  3 disclaimer, I don't know. To me it would be a very  4 interesting question whether every blog has this  5 disclaimer or whether this particular one because it  6 deals with a subject which is such a contentious subject  7 and is, has been known to create, you know, political  8 dissent that sometimes sort of doesn't become very  9 mannerly, that's why this disclaimer is here. But, you  10 know, I read this, this is a very legalistic term  11 paragraph.  12 Q. Fair enough. But be that as it may, Dr. Levine,  13 the, the paragraph here does say, "All information on  14 this blog is for general information and is not peer  15 reviewed," can we agree that's what that says there in  16 the disclaimer?  17 A. That is true.  18 Q. Okay. So, Dr. Levine, your report discusses in  19 many places, moving away from this exhibit so you don't  20 need to continue to look at it, your report discusses in  21 many places that trans adolescents are being seen, and  22 we, you've said it a few times today as well, that trans  23 adolescents are being seen one time and being given a  24 prescription in an hour for, you know, puberty blockers  25 or cross sex hormones. And you testified in your</p>

<p style="text-align: right;">Page 198</p> <p>1 deposition on March 30th that your only evidence for 2 that assertion is a meeting that you had with 35 parents 3 on a Zoom call and that you don't actually know how many 4 parents you've talked to who have said that that kind 5 of "rapid care" is happening, right? 6 A. In one year, maybe 2019, I saw six parents who 7 told me the same thing. 8 Q. And you -- 9 A. So I really, I think you're not accurately 10 summarizing my previous comments about this. You're, 11 what you're saying -- 12 Q. I understand. Hang on, let's, let's go look at 13 your testimony from that transcript and I want you to be 14 refreshed on what you said. So I think that is exhibit, 15 let me look at the exhibit list really quickly here. 16 That's going to be Exhibit 3. I think in the folder you 17 can just click on it. 18 A. Okay, I have it up. 19 Q. Okay. So you're going to scroll to Page 123 20 again, the page numbers in this document are in the 21 lower right-hand corner. 22 A. I'm currently on Page 80. I'm getting there. 23 Q. It's a long document. 24 A. Page 180? 25 Q. No, that would be 123, Page 123, 1-2-3.</p>	<p style="text-align: right;">Page 200</p> <p>1 organization? Answer, a woman contacted me and said 2 that she belongs to an organization of concerned parents 3 of trans teenagers or children. She sent me an analysis 4 that she made, a little research that she had done 5 demonstrated a very high intelligence of all the 6 children in this group and very high incidence of autism 7 and other developmental problems. She sent me that 8 data, she wanted some advice from me about how that got 9 published and then she invited me to give a talk. When 10 we talked she said she will get back to me and she got 11 back to me and invited me to give a talk to the parent 12 group, so that's what happened." 13 Skipping down to Page 123, Dr. Levine, at 14 line 2, "I'm just going to try to, so I appreciate what 15 you've explained. Could you tell me how many actual 16 parents have described to you personally an experience 17 where their child was diagnosed and prescribed treatment 18 in an hour? Answer, well, if, some people it would be 19 two hours, okay. Question, let me just start with one 20 hour. How many parents had told you directly that their 21 child has been prescribed, diagnosed and prescribed 22 treatment in an hour? Answer, I would say perhaps 23 50 percent of the people who have consulted me. 24 Question, and how many people have consulted you? 25 Answer, I can't really say or I really can't answer.</p>
<p style="text-align: right;">Page 199</p> <p>1 A. 123. I am on Page 123. 2 Q. Okay. And now that you've gotten there, I 3 revise my statement. Please go to Page 121. 4 A. Okay. 5 Q. Okay. Starting at line 4, do you see that there 6 at the top of the page? 7 A. Mm-hmm. 8 Q. Okay. "So how many parents have you talked, how 9 many parents have you talked to about their concern with 10 what you call the rapid affirmation model? Answer, 11 well, I gave a talk to 35 parents probably a year ago, 12 in 2017 I think I wrote about it in the article that the 13 last four or five cases that I was involved with the 14 parents all said the same thing, that is, they were 15 horrified that after one hour their child was diagnosed 16 and had recommend, had recommendations that horrified 17 them. Question, sorry, how, where was the talk that you 18 gave to the 35 parents, where was that? It was in, it 19 was in my easy chair in my bedroom. Question, what was 20 the convening, what was the venue for that? It was a 21 group of parents who invited me to give a talk and what 22 I gave a talk on was the aspects of what I know about 23 human identity, not just gender identity. Was that, was 24 this group of parents affiliated with an organization or 25 how did they, say, how did they present themselves as an</p>	<p style="text-align: right;">Page 201</p> <p>1 You know, if I told you 11, if I told you 16, if I told 2 you four, I would, I would have no conviction that that 3 answer is correct. I'm telling you I have the 4 impression" -- okay, let's stop there actually. 5 So, so that's what you, that's what you 6 testified to a month ago on March 30th, just about a 7 month ago, Dr. Levine, on March 30th. And that's still 8 an accurate reflection of your awareness of this rapid 9 affirmation analysis? 10 A. Mr. Charles, I think this deposition was in 11 September of 2021, if I'm -- 12 Q. The one you're looking at? 13 A. The one that you're quoting from. 14 Q. No, no, this is BPJ from March 30th. 15 A. Oh. 16 Q. Are you looking at, are you looking at 17 Exhibit 3? 18 A. Yeah, I am. 19 Q. Yeah, yeah, this is from March 30th. 20 A. Okay, I'm sorry. So, I'm sorry, what is your 21 question again? 22 Q. Oh, so I'm just, I'm saying has, has any of this 23 changed, has your, your answer to any of this changed in 24 the last 30 days basically? 25 A. Let's see, today is Wednesday. On Monday at</p>



<p style="text-align: right;">Page 202</p> <p>1 12:30 I spoke to a parent who is the former dean of a  2 medical school, the former dean of a medical school who  3 told me about his masculine autistic son who's brilliant  4 and who went off to law school and decided apropos of  5 nothing the parents understood that he was trans and was  6 able to get a recommendation for hormones after an hour  7 with a new therapist.  8 Q. Okay. So, so that's, that's one, one account  9 that you've heard of from a parent in the last 30 days,  10 right?  11 A. In the last 48 hours.  12 Q. Right. But, I mean, since the time you gave  13 this deposition that we were just looking at?  14 A. March 30th. I'm just trying to think if there  15 was somebody, some other experience in the last 28 days,  16 29 days. Yes, there is another, there's another family  17 where I was called from an out of state family because  18 they, they lived in New Jersey and they, they consulted  19 a number of people. And, and I think three different  20 people told them that they believed that affirmative  21 care is the best treatment and that they would affirm  22 their trans 17-year-old who's, who for the last three  23 months has been saying that he's trans. And the, the  24 parents were panicking about this and talked to me about  25 this. So --</p>	<p style="text-align: right;">Page 204</p> <p>1 A. That's, it is possible.  2 Q. Okay.  3 A. It is possible. That's what I'm advocating, you  4 know.  5 Q. Okay. And, and so, and exactly, okay, perfect.  6 Let's, let's take a look, Dr. Levine, do you -- give me  7 just a minute here. Okay. So you, you've talked some  8 today, Dr. Levine, and in other testimony you've  9 provided that in your experience there, there are some  10 children who persist in their asserted gender identity  11 through puberty, right?  12 A. Yes.  13 Q. And you've had some patients like that, right?  14 A. Yes.  15 Q. And you've testified that you've heard in some  16 cases positive reports from these patients and from time  17 to time from their families as well, right?  18 A. Yes.  19 Q. Okay. And you've testified previously that you  20 think -- well, sorry, let me back up. Okay. So you've  21 also testified previously that you think the majority of  22 your patients persist in transitioning, right? I can  23 narrow, I can narrow the question a little bit, I  24 understand that's a large universe.  25 So for the patients you have who you have</p>
<p style="text-align: right;">Page 203</p> <p>1 Q. When you say --  2 A. I can't think of anything else in the last  3 30 days or 29 days.  4 Q. Okay. When you say those folks were worried  5 about affirming, do you mean, you didn't, did they  6 explain to you what, what was being proposed to them?  7 A. Yes, that, that, and inquiring, talking to the  8 therapist, to three different therapists. They all said  9 they all believed in affirmative care and the best thing  10 to do with a 17-year-old, however long he's had this  11 concept of his gender, was to affirm it.  12 Q. Okay. But they, they didn't say they were going  13 to give hormones to the child in an hour, right?  14 A. Oh, no, no, because it's -- no, of course not.  15 Q. Okay. Okay. Just making sure. Okay. So, so  16 we, we've talked a lot today about your, your  17 understanding that some, you know, your belief that some  18 providers out there are moving too quickly. But this  19 work on behalf of, of -- let me back up. So you've,  20 you've testified earlier today that you believe that  21 there are providers who are moving too quickly, that  22 there's rapid affirmation with, you know, immediate  23 access to hormones. It is possible for this work to be  24 done deliberately and with adequate safeguards though,  25 isn't it?</p>	<p style="text-align: right;">Page 205</p> <p>1 authorized, you know, provided a letter in accordance  2 with the standard practice to authorize either endocrine  3 or surgical interventions, for those patients, the  4 majority of them you have testified continue forward  5 with those interventions, as far as you know?  6 A. Well, I wrote a letter of recommendation for  7 hormones with a very good explanation of who this person  8 was and what his struggles were. I had seen him in  9 psychotherapy for about a year and a half and I had  10 promised him that when he turned 18 if he still  11 persisted he would, I would write him a letter. I did,  12 he turned 18 in August and he got hormones very quickly  13 thereafter that based on my letter.  14 He then went off to college as a trans person,  15 he had just came out as a trans person, he had great  16 trouble at this college because he couldn't find a  17 roommate. And finally there was one other trans  18 incoming fresh-person and, and the two of them roomed  19 together. They didn't get along at all and he then left  20 college and started college at Ohio State instead. And  21 while he was at college, and was never doing this  22 before, he started using heroin and he died in his dorm  23 room from a heroin overdose on March 17th, 2021 in his  24 freshman year.  25 So, you see, that's an example, that's an</p>

<p style="text-align: right;">Page 206</p> <p>1 example of somebody who I have given hormones to and --</p> <p>2 Q. Yes, but again, Dr. Levine that's not my</p> <p>3 question. And I want to be clear that I have heard that</p> <p>4 story from you and I'm very, very sorry and I'm sorry</p> <p>5 for the loss of that young person, I'm sorry for the</p> <p>6 loss, the loss to that young person's family, and I want</p> <p>7 to be extremely clear about that point. But I also, you</p> <p>8 know, want to return to my question which is a question</p> <p>9 about the majority of your patients, not the outliers</p> <p>10 and not the exceptions.</p> <p>11 I'm asking are the majority of the patients who</p> <p>12 you authorize care for who are, you know, before they,</p> <p>13 before they go out and as you say you never hear from</p> <p>14 them again because the lack of follow-up, I'm saying</p> <p>15 when you authorize that care for them do the majority of</p> <p>16 them persist in pursuing that care?</p> <p>17 A. Well, I, there's just another person that I,</p> <p>18 based on his request I, based on her request, excuse me,</p> <p>19 I wrote a letter for orchiectomy and the patient never</p> <p>20 had the orchiectomy.</p> <p>21 Q. I understand that, Dr. Levine. Again, I'm not</p> <p>22 asking about --</p> <p>23 A. The answer to the question has to do with the</p> <p>24 denominator, you see. I don't know the denominator to</p> <p>25 use when you say the majority of my patients, that would</p>	<p style="text-align: right;">Page 208</p> <p>1 continue to identify as trans for the, you know, for the</p> <p>2 rest of their natural life and continue with the medical</p> <p>3 transition through X, Y steps. I'm saying from your</p> <p>4 vantage point at the point of which you authorize that</p> <p>5 care for them, do the majority, and we don't have to use</p> <p>6 majority, more, more than not do they go ahead and make</p> <p>7 those steps, and what I hear you saying is yes.</p> <p>8 A. Mr. Charles, what you need to understand is</p> <p>9 people come to people like me to undergo a process in</p> <p>10 order to get say a letter of recommendation. They often</p> <p>11 promise to come back and see me and the vast majority of</p> <p>12 them almost never come back and see me, and that's why I</p> <p>13 can't really answer whether they persist or not. And</p> <p>14 this has been a problem in all of the research about the</p> <p>15 loss to follow up.</p> <p>16 People come with this idea that they want this</p> <p>17 particular treatment and they need a letter, and so if</p> <p>18 they work with me I give them a letter, and I want to</p> <p>19 follow them up. You know, in Sweden it was recommended</p> <p>20 that everyone have lifelong psychiatric follow-up care,</p> <p>21 but in America, and I think in Sweden we don't have that</p> <p>22 either.</p> <p>23 So people come to us with a treatment in mind</p> <p>24 and if they meet our eligibility and readiness criteria</p> <p>25 we give them a letter and then they, then they are often</p>
<p style="text-align: right;">Page 207</p> <p>1 mean 51 percent of my patients, and I don't really have</p> <p>2 a clear denominator. I need to ask you a question.</p> <p>3 Q. No, no, Dr. Levine, hang on. We don't have to,</p> <p>4 we don't have to get into percentages or specifics in</p> <p>5 that regard.</p> <p>6 A. Well, you were asking me a question about</p> <p>7 majority, that's a, that's a mathematical concept, it</p> <p>8 needs a denominator which I can't tell you.</p> <p>9 Q. Okay. So let me ask you this, more often not,</p> <p>10 more patients than not in your estimation pursue</p> <p>11 transition, it is, it is not, it is, these are</p> <p>12 exceptions that you are identifying for me. And I'm</p> <p>13 asking you at a 30,000-foot view from a general</p> <p>14 overview.</p> <p>15 A. I would say about the majority of teenagers that</p> <p>16 I've seen, I have not had follow-up to know the answer</p> <p>17 to your question. For the majority of adults that I</p> <p>18 have seen, the majority of them persist in their</p> <p>19 transgender life.</p> <p>20 Q. Yeah. I, my question is even more, even more</p> <p>21 narrow than that and I appreciate that you answered it,</p> <p>22 so thank you for that. But what I'm saying is, you</p> <p>23 know, folks persist, patients that is, you know, persist</p> <p>24 in going through with the transition, right, so they,</p> <p>25 they, whether or not they, I'm not asking do they</p>	<p style="text-align: right;">Page 209</p> <p>1 lost to follow-up. And so it makes it very difficult</p> <p>2 for me to answer authoritatively your question and I</p> <p>3 want you to understand that.</p> <p>4 Q. I do understand that, thank you. And you've</p> <p>5 testified before about your frustrations with the lack</p> <p>6 of follow-up. Okay. So I'm going to go ahead and</p> <p>7 introduce another exhibit, give me just a moment.</p> <p>8 A. Is it in?</p> <p>9 Q. Just a minute, I'm having an issue with the</p> <p>10 introduction, it will be just a moment. Okay. Dr.</p> <p>11 Levine, let's actually go back to your report. Can you</p> <p>12 hear me okay?</p> <p>13 A. Yes.</p> <p>14 Q. Page 26, Paragraph 51.</p> <p>15 A. I lost it a second, what did I do. Somehow I</p> <p>16 just got on this Finnish thing. All right, my report,</p> <p>17 all right, I'm on my way.</p> <p>18 Q. Okay.</p> <p>19 A. All right. 21, is that what you said?</p> <p>20 Q. Page 26.</p> <p>21 A. 26, got it.</p> <p>22 Q. Okay. And looking at Paragraph 51.</p> <p>23 A. Yeah.</p> <p>24 Q. Okay. So in this paragraph you talk about the</p> <p>25 treatment costs associated with puberty blockers and you</p>

<p style="text-align: right;">Page 210</p> <p>1 list that those are between \$6,000 and \$4,000 per year</p> <p>2 per child. Do you, do you know, Dr. Levine, how cost</p> <p>3 sharing works between West Virginia Medicaid Program and</p> <p>4 the federal government?</p> <p>5 A. I presume that Medicaid patients who are insured</p> <p>6 by Medicaid don't pay for their medications.</p> <p>7 Q. Okay. But I guess what I'm asking is, do you</p> <p>8 know what percentage or do you know what the cost is to</p> <p>9 West Virginia Medicaid versus what the cost is to the</p> <p>10 federal government, CMS, HHS that subsidizes the West</p> <p>11 Virginia Medicaid Program?</p> <p>12 A. Oh, no.</p> <p>13 Q. Okay. So you're not offering an opinion about</p> <p>14 the cost of puberty blockers under the West Virginia</p> <p>15 cost sharing plans, right?</p> <p>16 A. You mean to the insurance company?</p> <p>17 Q. Correct, yeah.</p> <p>18 A. Oh, yeah, no. This is, this kind of information</p> <p>19 is very kept, very carefully kept from physicians.</p> <p>20 Q. Okay. So not, no, making no representations in</p> <p>21 this report about the ultimate cost to the program or</p> <p>22 even to the patient, right?</p> <p>23 A. No, we physicians don't know about things like</p> <p>24 that.</p> <p>25 Q. Okay. So then the, in the same paragraph at the</p>	<p style="text-align: right;">Page 212</p> <p>1 A. Well, I don't think West Virginia is an</p> <p>2 exception to the international phenomenon of increasing</p> <p>3 numbers of gender, cross gender identified adolescents.</p> <p>4 Q. Oh, no, but I'm, Dr. Levine, I'm asking about</p> <p>5 surgery specifically. You, you're not offering an</p> <p>6 opinion about how many West Virginia Medicaid members</p> <p>7 may need or be indicated for surgery for gender</p> <p>8 dysphoria, that's not an opinion you're offering here?</p> <p>9 A. I still want to say that West Virginia is</p> <p>10 probably no exception and if we increase the number of</p> <p>11 people getting treatment and given, you know, some</p> <p>12 professionals' concepts about how to ideally treat these</p> <p>13 individuals, I wouldn't be surprised if more West</p> <p>14 Virginia citizens would be requesting surgery.</p> <p>15 Q. But you don't know how many West Virginia</p> <p>16 Medicaid member recipients may need surgery?</p> <p>17 A. Oh, no, I don't know that.</p> <p>18 Q. Okay. And you can't, you can't then also know</p> <p>19 like what particular surgeries any of those people might</p> <p>20 need?</p> <p>21 A. Oh, yes, oh, yes, I do, I can.</p> <p>22 Q. No, no, I'm saying the individual people, you</p> <p>23 can't know what, what they need because you don't --</p> <p>24 A. Oh, if I know if they're females --</p> <p>25 Q. Dr. Levine, I'm talking about you're not</p>
<p style="text-align: right;">Page 211</p> <p>1 bottom of Page 26, going into Page 27 you say, "The cost</p> <p>2 of surgeries, reoperations and occasional requests to</p> <p>3 reverse the surgeries for those who request the</p> <p>4 interventions are in the tens to hundreds of thousands</p> <p>5 of dollars with some cases reaching into the millions."</p> <p>6 But again, you're not offering an expert opinion here</p> <p>7 about the cost of surgical care for the treatment of</p> <p>8 gender dysphoria under the West Virginia Medicaid</p> <p>9 Program, right?</p> <p>10 A. No, I'm just saying that physicians like myself</p> <p>11 have a hard time keeping up with our fields of expertise</p> <p>12 and, and Dr. Karasic is probably no exception. And when</p> <p>13 he assures the world that this is cost-effective care, I</p> <p>14 don't really think he has any basis for knowing that,</p> <p>15 for the same reasons that you are, you know, pointing to</p> <p>16 my deficiencies of knowledge.</p> <p>17 Q. Fair enough. And, and you also don't represent</p> <p>18 that you know how much the federal government subsidizes</p> <p>19 surgeries that West Virginia excludes or doesn't exclude</p> <p>20 from its coverage under the Medicaid program?</p> <p>21 A. I don't, I don't know at all.</p> <p>22 Q. Okay. And you're not offering an opinion about</p> <p>23 which members or how many West Virginia Medicaid</p> <p>24 recipients might need surgery, right, for treatment of</p> <p>25 gender dysphoria, let me be clear?</p>	<p style="text-align: right;">Page 213</p> <p>1 representing that you know what individual members might</p> <p>2 need as per their specific individual treatment? I'm</p> <p>3 not asking do you know the range of types of surgeries,</p> <p>4 that's not my question. My question is, you are not</p> <p>5 offering an opinion that you know what individual West</p> <p>6 Virginia Medicaid members, what kinds of surgery they</p> <p>7 may or may not need?</p> <p>8 A. So if you tell me there's a person named Jane</p> <p>9 Doe and John Doe in West Virginia and that they're</p> <p>10 20 years old and they're persistent in their transgender</p> <p>11 identity for eight years, I, you know, I can, as you</p> <p>12 said, I could pretty much predict what the first surgery</p> <p>13 would, that would be requested would be. But I would, I</p> <p>14 couldn't guarantee that I would be right because someone</p> <p>15 may want a rhinoplasty when I think they want, they</p> <p>16 would want an orchiectomy. But, you know, but I don't</p> <p>17 want to, you know, I mean, these, this is not rocket</p> <p>18 science because there are only a limited range of</p> <p>19 surgeries that could possibly be done.</p> <p>20 Q. Okay. I guess what I mean is, treatment for</p> <p>21 transgender people for the treatment of gender dysphoria</p> <p>22 is individualized, so you're not saying I know what this</p> <p>23 particular person needs because you haven't met with</p> <p>24 them, right?</p> <p>25 A. Well, that's right. But on the other hand --</p>

<p style="text-align: right;">Page 214</p> <p>1 Q. That was what I was asking, I just wasn't asking 2 it very clear, so. 3 A. Okay. 4 Q. So you, let's see. Let's see, let's go to 5 Page 27. 6 A. I think that's where I am, right. 7 Q. I was still on 26. So 27, oh, yes, we did go to 8 27, that's right. Okay. So the, this paragraph here 9 talks about the costs of fertility preservation that 10 must be factored in, adults undergoing cross sex 11 hormonal and surgical interventions have either 12 diminished or lost fertility, but you, are you aware 13 that West Virginia Medicaid doesn't cover fertility 14 preservation under its plan? 15 A. I would be surprised if they did. 16 Q. All right. So you're not offering an opinion of 17 what the cost might be even if they did, right? 18 A. Except that, you know -- 19 Q. I'm sorry, let me clarify. About what the cost 20 might be between the federal cost sharing between West 21 Virginia Medicaid and the federal government? 22 A. For a service it doesn't, it's not covered and 23 it's not covered for cisgender people either. 24 Q. Right. 25 A. Yeah. So this is, this belongs to the, you</p>	<p style="text-align: right;">Page 216</p> <p>1 treatment, they think about it seriously, they think 2 about it recurrently and they undergo an internal 3 discernment process over time, hopefully over time where 4 they, they may want one and not another or they want 5 none or they want all of the above. And if they want 6 all of the above then they go through the first step, 7 say endocrine treatment, they may then change their mind 8 that they don't want all of the above. If they have an 9 intimate physical relationship, sexual relationship with 10 somebody they may decide having, keeping their body is 11 not such a bad idea. 12 So when you ask me what scientific articles, 13 what peer reviewed scientific articles, again, I'm 14 saying I've had a lot of clinical experience, I know 15 these people pretty well and I know them better than 16 those people who are rapidly affirming them. And so I'm 17 saying that they, I don't know whether the majority will 18 in fact, but the majority do think very seriously about 19 it. It almost is an inseparable concept, I'm 20 transgender from shall I change my body, shall I change 21 my physiology. 22 Q. Okay. So looking at the next paragraph 23 beginning with, "The data already show," Paragraph 54 24 there. 25 A. Mm-hmm.</p>
<p style="text-align: right;">Page 215</p> <p>1 know, fee for service private sort of practice -- 2 Q. Correct. 3 A. -- or dash on the line business. 4 Q. Okay. So looking at Page 28 now, beginning 5 there with Paragraph 53. So just very quickly, you say 6 in the first sentence, "These costs have to be 7 considered in the context of the rapid rise of the rate 8 of trans identification especially among youth." 9 Actually, scratch that, that's not the sentence I meant 10 to read. 11 I meant to read the second sentence which says, 12 "Although not all trans identified individuals will 13 choose to undergo medical interventions, the majority 14 do, and this proportion will only increase when such 15 interventions are provided at no cost to the patient and 16 when access to noninvasive treatments with psychotherapy 17 is effectively curbed as unethical." 18 So there's no footnote citation there for that 19 sentence, so my question is what are you, what peer 20 reviewed scientifically collected data are you citing to 21 for the assertion that the majority of trans identifying 22 individuals choose to undergo medical interventions? 23 A. Maybe I can correct that or refine that a little 24 bit better for you. Almost everyone who has a trans 25 identity thinks about medical treatment and surgical</p>	<p style="text-align: right;">Page 217</p> <p>1 Q. "The data already show that the numbers of 2 individuals seeking transgender interventions on West 3 Virginia Medicaid" -- 4 MR. CHARLES: Sorry, Kelley. Slowing down. 5 Q. "The data already show that the numbers of 6 individuals seeking transgender interventions on West 7 Virginia Medicaid increased from 30 individuals in 2016 8 to 686 individuals through the end of September in 2021 9 at 2,300 percent increase in less than five years." Dr. 10 Levine, do you know how many participants there are in 11 West Virginia Medicaid? 12 A. No. 13 Q. Okay. Are you aware that defendants in this 14 case have disclosed that there are 618,000 West Virginia 15 Medicaid participants? 16 A. Well, I think if the answer, the first question 17 is no, the answer to the second question must be no. 18 Q. Okay. Let me put another document up very 19 quickly. 20 (Exhibit 22 marked for identification.) 21 Q. It's a large file, so it's taking a long time to 22 come up. Okay. You should be able to see it now, it's 23 Exhibit 22. 24 A. I can't see it. Let me try refreshing once 25 again. Yep, 22.</p>

<p style="text-align: right;">Page 218</p> <p>1 Q. Okay.</p> <p>2 MR. CHARLES: So this is, for the record,</p> <p>3 I'm showing Dr. Levine what has been marked as SL22.</p> <p>4 It's the transcript, excuse me, the transcript of the</p> <p>5 remote deposition of Commissioner Cynthia Beane from</p> <p>6 March 29, 2022.</p> <p>7 Q. Dr. Levine, if you'll just scroll to Page 109.</p> <p>8 A. Okay. I'm almost there. 107, okay, 109.</p> <p>9 Q. Okay. Then looking at, let's begin at line 10.</p> <p>10 And I'll just represent to you this is the testimony of,</p> <p>11 the deposition testimony of an official both in her</p> <p>12 individual and her organizational capacity as the, well,</p> <p>13 the Commissioner of the Bureau for Medicaid Services I</p> <p>14 believe in West Virginia. So at line 10, okay. And the</p> <p>15 column at the bottom of the table shows the total number</p> <p>16 of members enrolled in all Medicaid plans by month,</p> <p>17 correct, so in December 2021 there were a total of</p> <p>18 618,691 members, is that right?</p> <p>19 A. Correct.</p> <p>20 Q. Okay. So I, I was slightly off, Dr. Levine,</p> <p>21 it's 618,691 members of Medicaid, and you see that</p> <p>22 reflected there in that official testimony, right?</p> <p>23 A. I see it.</p> <p>24 Q. Okay. So then do you know, do you know what</p> <p>25 percentage 686 is of 618,000?</p>	<p style="text-align: right;">Page 220</p> <p>1 me.</p> <p>2 Q. Right. But again, the parameters of Rule 26</p> <p>3 require that you have to disclose all the facts and data</p> <p>4 you considered in drafting your report. So you didn't</p> <p>5 disclose where you got this number from, right?</p> <p>6 A. I didn't realize I had to, but that's my</p> <p>7 deficiency. I didn't go to law school.</p> <p>8 Q. So I'm going to introduce another exhibit here.</p> <p>9 MR. CHARLES: Actually, let's, I'm going to</p> <p>10 take a brief break right here. Kraig, Kelley, let's go</p> <p>11 off the record.</p> <p>12 Q. Dr. Levine, we'll come back at 4:50 p.m. Thank</p> <p>13 you.</p> <p>14 VIDEO TECHNICIAN: We're going off the</p> <p>15 record at 4:43 p.m.</p> <p>16 (A break was taken at 3:43 p.m.)</p> <p>17 VIDEO TECHNICIAN: We're going back on the</p> <p>18 record at 4:54 p.m.</p> <p>19 BY MR. CHARLES:</p> <p>20 Q. Okay. Dr. Levine, let's --</p> <p>21 THE WITNESS: It's 4:56 on my clock.</p> <p>22 Q. Let's look at, I'm going to put another exhibit</p> <p>23 here. Okay, it should be available, let me know when</p> <p>24 you can see it.</p> <p>25 A. I've got it.</p>
<p style="text-align: right;">Page 219</p> <p>1 A. Do you want me to use my calculator and tell you</p> <p>2 exactly?</p> <p>3 Q. I mean, I will represent to you the percentage</p> <p>4 if you'll agree to it, but it's up to you.</p> <p>5 A. If you're good in math, I'll accept it.</p> <p>6 Q. I'm not good at math, that's why I went to law</p> <p>7 school, but I will do this on my calculator and tell you</p> <p>8 that --</p> <p>9 A. Okay.</p> <p>10 Q. -- it is, it is .001 or 100th of a percent.</p> <p>11 A. .001.</p> <p>12 Q. And you can, I mean.</p> <p>13 A. You mean if it's .001 it's one thousands.</p> <p>14 Q. Oh, okay, 1/1,000 of a percent, okay. And this,</p> <p>15 this percentage is not, or the calculation is not in</p> <p>16 your, anywhere in your expert report, right?</p> <p>17 A. Right.</p> <p>18 Q. Okay. So where did you get the 686 individuals</p> <p>19 through September 2021 data from?</p> <p>20 A. From my lawyer.</p> <p>21 Q. Okay. But you didn't disclose that data you</p> <p>22 received from the state or the source anywhere in your</p> <p>23 report, did you?</p> <p>24 A. I don't know, I don't know the source of that</p> <p>25 data, it's just some of the information is provided for</p>	<p style="text-align: right;">Page 221</p> <p>1 (Exhibit 23 marked for identification.)</p> <p>2 Q. Okay. Dr. Levine, you talk in your report,</p> <p>3 let's see here, it's going to be Page 42 of your report</p> <p>4 about, "That many professionals are unfamiliar with</p> <p>5 these 11 research studies indicating a high natural</p> <p>6 resolution rate of gender dysphoria," I think that's</p> <p>7 supposed to say gender dysphoria in children, but it</p> <p>8 just says, "gender dysphoria children by late</p> <p>9 adolescence," do you see that?</p> <p>10 A. I don't see it, but I don't think I want to go</p> <p>11 to the report.</p> <p>12 Q. Okay.</p> <p>13 A. It just takes time.</p> <p>14 Q. Okay. That's fine. I'll just represent to you</p> <p>15 that's where I'm reading that from. And your citation</p> <p>16 is to this study here, or this article rather by James</p> <p>17 M. Cantor.</p> <p>18 MR. CHARLES: And for the record, I'm</p> <p>19 showing Dr. Levine what has been marked as SL23,</p> <p>20 "Transgender and gender diverse children and</p> <p>21 adolescents: Fact checking of AAP policy."</p> <p>22 Q. And the 11 studies you mentioned, Dr. Levine,</p> <p>23 are included by Mr. -- I'm sorry, I don't know if it's</p> <p>24 Dr. Cantor, is it Dr. Cantor, do you know?</p> <p>25 A. Yeah, I definitely know, it's Dr. Cantor.</p>



<p style="text-align: right;">Page 222</p> <p>1 Q. Okay. Thank you. The 11 studies are referenced 2 by Dr. Cantor in this article in an appendix, but let me 3 point you to the sentence where he says that. So 4 it's -- 5 A. I have the appendix in front of me. 6 Q. Okay, perfect. Let's just look at that. Okay. 7 So looking at that list of studies, the, the, how do I 8 say this, the, the oldest study is listed first, so 9 that's a study by P.S. Lebovitz published in 1972, do 10 you see that? 11 A. Yes. 12 Q. Okay. And then the second study by B. Zuger? 13 A. Yes. 14 Q. Published in 1978. A study by J. Money and A. 15 Russo published in 1979? 16 A. I see all those. 17 Q. Okay. I just, I'm just confirming the dates of 18 publication. So C.W. Davenport was published in 1986; 19 R. Green was published in 1987; it looks like R.J. 20 Kosky was published in 1987; Cohen-Kettenis and M. 21 Wallien was published in 2008; Drummond, et al. was 22 published in 2008; Singh, unpublished doctoral 23 dissertation was published in 2012; and lastly the 24 Steensma, et al. was published in 2013, right? 25 A. That's, although you didn't ask, I should tell</p>	<p style="text-align: right;">Page 224</p> <p>1 late '60s all the way through as I understand it the 2 latest was corrected in 2011. So I just, I'm confirming 3 that that's your understanding of the scope of the 4 follow-up studies as well? 5 A. Yeah, I confirm. 6 Q. Okay. And the, let me, the Singh dissertation 7 which was later published in the Frontiers of 8 Psychiatry, that did not include any data that was 9 collected after 2013, right? 10 A. I don't remember one way or the other. 11 Q. Okay. Let's, I'll just, we'll just take a look 12 really quickly. 13 (Exhibit 24 marked for identification.) 14 Q. Okay. That should be available to you, Dr. 15 Levine -- 16 A. Okay. 17 Q. -- as a new exhibit, it will be Exhibit 24. 18 A. The Singh article. 19 Q. That's correct, yeah, from Frontiers of 20 Psychiatry. 21 A. Oh, good. 22 Q. Okay. And you can see that now? 23 A. I do. 24 Q. Okay. So then just looking at the first page. 25 A. The abstract or the instruction?</p>
<p style="text-align: right;">Page 223</p> <p>1 you that the Singh, et al. article, this 2012, has been 2 published now that it's, there's more years, it was 3 published in Frontiers of Psychiatry in April 2021. 4 Q. Okay. 5 A. And so, you know, that's -- 6 Q. I'll, I'll, thank you for that, I'll turn to 7 that in a minute. So I just want to confirm, these 8 studies were all published, with the exception of 9 Steensma, they were all published before 2013, right? 10 A. Yes, these were follow-up studies, these are 11 long-term follow-up studies. 12 Q. And the datasets, none of the data that was 13 collected in any of these studies was collected after 14 2013, right? 15 A. Even after the DSM-V criteria. 16 Q. None of them, none of the data was collected 17 after 2013, right? 18 A. None of the original. 19 Q. Which, which data of any of these studies was 20 collected after 2013? 21 A. Oh, I see what you mean. 22 Q. Yeah. 23 A. I see. All right. 24 Q. I, I agree with you they are follow-up studies, 25 they, they follow youth sometimes as far back as the</p>	<p style="text-align: right;">Page 225</p> <p>1 Q. It's, I don't see a label abstract, but I'm 2 assuming that's what it is, just that intro paragraph on 3 the first page. 4 A. Mm-hmm. 5 Q. Okay. So I'm assuming, Dr. Singh, et al. is 6 writing this. And, let's see, we've got, okay. So, 7 "This study reports follow-up data on the largest sample 8 to date of boys clinic-referred for gender dysphoria 9 (n=139) with regards to gender identity and sexual 10 orientation. In childhood, the boys were assessed at a 11 mean age of 7.49 years with a range of 3.33–12.99 at a 12 mean year of 1989 and followed up at a mean age of 20.58 13 years with a range of 13.07–39.15 at a mean year of 14 2002." Do you see that, have I read that correctly? 15 A. You did. 16 Q. Okay. Let's go to page -- give me just a minute 17 here. 18 MR. CHARLES: Kraig, let me go off the 19 record real quickly. 20 VIDEO TECHNICIAN: Okay. One moment, 21 please. We're going off the record at 5:04 p.m. 22 (A break was taken at 4:04 p.m.) 23 VIDEO TECHNICIAN: We're going back on the 24 record at 5:08 p.m. 25 BY MR. CHARLES:</p>


<p style="text-align: right;">Page 226</p> <p>1 Q. Okay. So, Dr. Levine, back to the Singh 2 article. And if you would, please, scroll to Page 4, 3 and you're looking for the heading, "Method." 4 A. I'm there. 5 Q. Okay. So there in the first paragraph, "The 6 participants were 139 boys ('birth-assigned males') who 7 in childhood had been referred to and then assessed in 8 the Gender Identity Service, Child, Youth and Family 9 Program at the Centre for Addiction and Mental Health 10 (CAMH) in Toronto, Ontario between 1975 and 2009 (mean 11 year of assessment, 1989) and were adolescents or adults 12 at follow-up (mean year at follow-up, 2002)" 13 Continuing on there to the second paragraph, 14 "Participants entered the follow-up study through two 15 methods of recruitment. The majority of participants 16 (77%) were recruited for research follow-up. There were 17 two main waves of participant recruitment through 18 research contact, from 1986 to 1993 (n=32), and then 19 from 2009 to 2011 (n=71)." 20 So just, I just wanted to confirm with you 21 that's the, that's the same dataset that Dr. Singh, then 22 Ph.D. candidate Dr. Singh, presented in the dissertation 23 as well. So there, there was a, a follow-up collection 24 period from 2009 to 2011, but nothing beyond 2011, is 25 that, that's your understanding there of that, of those</p>	<p style="text-align: right;">Page 228</p> <p>1 dysphoria in childhood, Jiska Ristori and Thomas D. 2 Steensma, published 2015." Oh, sorry, published, yes, 3 published online January 2016, accepted October 2015. 4 You cite this and the Singh article we just looked at in 5 your report for the, for the proposition that, "The 6 majority of children," and you put in parentheses, 7 "between 61 and 98 percent of them who identifies 8 transgender will reidentify with their sex before 9 reaching maturity absent interventions." So I just 10 wanted to locate that in context, in the context of your 11 report. So let's take a look at this article. Okay. 12 So if you would scroll to page, it's the third page of 13 this article, but it's numbered Page 15. 14 A. Okay, I'm on Page 15. 15 Q. Okay. And you'll see that the, this study is 16 listing the follow-up studies it's referencing in the 17 Table 1 at the bottom right-hand corner, do you see 18 that? 19 A. Yes. 20 Q. Okay. And do you see any overlap between the 21 studies cited in Dr. Cantor's article and this table 22 here in terms of on the left-hand side the, the names of 23 the authors and the year of publication? 24 A. Well, the Bakwin, was the Bakwin article in 25 Cantor?</p>
<p style="text-align: right;">Page 227</p> <p>1 sentences? 2 A. So isn't it -- let's see. During the period of 3 data collection 32 patients recontacted service for 4 clinical reasons and they were informed about the 5 opportunity to participate in a follow-up site. Okay. 6 So some were purely research, they agreed to 7 participate, and some asked for various services from 8 CAMH again. 9 Q. Right. And that collection in total, both the 10 initial contacts that was either patient initiated or 11 follow-up research requested, that all happened before, 12 collectively before 2013? 13 A. Yep. 14 Q. Okay. And let's take a look at one more article 15 here. 16 (Exhibit 25 marked for identification.) 17 Q. This should be available, Dr. Levine, if you 18 refresh your screen. 19 A. Are we done with the Cantor article? 20 Q. Oh, yes, you can put that to the side. Thank 21 you. 22 A. Okay. Okay. 23 Q. And do you see what's been marked as SL25? 24 A. Yes. 25 Q. Okay. And this article is entitled, "Gender</p>	<p style="text-align: right;">Page 229</p> <p>1 Q. Now that you mention it, I don't think it was. 2 A. Yes. 3 Q. Okay. 4 A. And, and what about the Davenport? 5 Q. Yeah, Davenport was there, that was the 6 follow-up study of ten boys. 7 A. Yeah, I see. Of course Green was, yeah, and the 8 girls weren't in there because, yeah, all right. 9 Q. Okay. So is, is it your understanding that this 10 study is also looking at that, again that historical 11 dataset that begins back in the late '60s, early '70s 12 and continues through at the latest point 2011, right, 13 for the follow-up? 14 A. I'm going to trust you on that. 15 Q. Okay. Okay. 16 MR. CHARLES: Kraig, can we go off the 17 record. 18 VIDEO TECHNICIAN: Yeah, one moment please. 19 We're going off the record at 5:15 p.m. 20 (A break was taken at 4:15 p.m.) 21 VIDEO TECHNICIAN: We're going back on the 22 record at 5:25 p.m. 23 EXAMINATION 24 BY MR. DAVID: 25 Q. Dr. Levine, I'm going to be as brief as I</p>

<p style="text-align: right;">Page 230</p> <p>1 possibly can, but I do have a few questions for you.</p> <p>2 And first I'd like to go to Exhibit 10, please.</p> <p>3 A. I'm there.</p> <p>4 Q. Okay. And if you'll go to Page 8, which is</p> <p>5 denoted in the bottom left-hand corner of that page.</p> <p>6 A. I got it.</p> <p>7 Q. Okay. And you were asked questions specifically</p> <p>8 about the section that has the heading, "Consistency of</p> <p>9 recommendations across the CPG's," do you remember those</p> <p>10 questions?</p> <p>11 A. Yes.</p> <p>12 Q. Okay. Now you were asked questions specifically</p> <p>13 about this section as it related to a citation in your</p> <p>14 report that the WPATH standards of care 7 were</p> <p>15 incoherent, do you remember that?</p> <p>16 A. Yes.</p> <p>17 Q. Okay. I'd like you to take a second and read</p> <p>18 this paragraph or this section again, just the section</p> <p>19 that's, "Consistency of recommendations across the</p> <p>20 CPG's," and let me know when you're done reading it.</p> <p>21 A. I'm sorry, oh, you mean read it privately, not</p> <p>22 read it out loud?</p> <p>23 Q. Yes, just read it privately and, and let me know</p> <p>24 when you're done reading it.</p> <p>25 A. Okay.</p>	<p style="text-align: right;">Page 232</p> <p>1 yes.</p> <p>2 Q. And this is the statement that was made by Dr.</p> <p>3 Marcie Bowers regarding an article by Abigail Shrier in</p> <p>4 which she was quoted, is that right?</p> <p>5 A. Yes.</p> <p>6 Q. Okay. And this entire article was read, or</p> <p>7 statement was read into the record and you were asked</p> <p>8 some questions about that, do you remember that?</p> <p>9 A. There weren't very many questions asked about</p> <p>10 me, I think Mr. Charles wanted me to see that, that Dr.</p> <p>11 Bowers made a second statement, and to me this is a</p> <p>12 political statement to as many politicians come out and</p> <p>13 say things and then they realize there's a blow-back and</p> <p>14 they modify their position. I don't recall too many</p> <p>15 questions other than did you see that, did you read</p> <p>16 that, so forth.</p> <p>17 Q. Do you remember that this exhibit was introduced</p> <p>18 in relation to part of your report in which you cited a</p> <p>19 quote by Dr. Bowers related to exclusion of individuals</p> <p>20 from WPATH if they dissented to the gender affirming</p> <p>21 model?</p> <p>22 MR. CHARLES: Objection.</p> <p>23 A. I think you're right, I do remember.</p> <p>24 Q. And, and in the review of Exhibit 11 and it</p> <p>25 being read into the record did, is there anything in</p>
<p style="text-align: right;">Page 231</p> <p>1 Q. After reading that paragraph can you tell me</p> <p>2 what you were referring to in your report when you</p> <p>3 stated that this document said that these Wpath</p> <p>4 standards of care 7 were incoherent?</p> <p>5 MR. CHARLES: Objection.</p> <p>6 A. It was my understanding from reading the report</p> <p>7 that the 121-page standards of care had statements that</p> <p>8 seemed to be recommendations that were contradicted by</p> <p>9 different places in the, in the document and that some</p> <p>10 of them were contradictory, some of them seemed to be</p> <p>11 recommendations, but they were so qualified that they,</p> <p>12 they, they were not clear and these six independent</p> <p>13 reviewers could not, could not discern the clarity of</p> <p>14 the recommendations and many of them pointed to the</p> <p>15 contradictions between, I'm just making up pages now,</p> <p>16 Pages 21 and Pages 49.</p> <p>17 And so in the sense that there were, it was</p> <p>18 incoherent, it wasn't consistent, it wasn't clear, and</p> <p>19 it was an indication that is, that there is considerable</p> <p>20 uncertainty about how to take care of transgender</p> <p>21 people, even among the 36 authors of the, maybe it's 34,</p> <p>22 36 authors of the standards of care in 2011.</p> <p>23 Q. Thank you, Doctor. If you'll go next to</p> <p>24 Exhibit 11.</p> <p>25 A. Exhibit 11, "Dear colleagues and friends," oh,</p>	<p style="text-align: right;">Page 233</p> <p>1 here that you recall showing that Dr. Bowers was</p> <p>2 recanting in any way the comments she made about people</p> <p>3 dissenting from the gender affirming care model?</p> <p>4 MR. CHARLES: Objection.</p> <p>5 A. No.</p> <p>6 Q. Okay.</p> <p>7 A. Did I misunderstand your question?</p> <p>8 Q. No, you did not. Let's go to Exhibit 12, and</p> <p>9 that is the decision memo from Centers for Medicare and</p> <p>10 Medicaid Services. Do you have that in front of you</p> <p>11 now?</p> <p>12 A. I do.</p> <p>13 Q. And you were, do you remember being asked some</p> <p>14 questions about Exhibit 12?</p> <p>15 A. Yes.</p> <p>16 Q. Okay. In your review of Exhibit 12, does this</p> <p>17 decision memo mandate that Medicaid covered gender</p> <p>18 affirming surgery?</p> <p>19 MR. CHARLES: Objection.</p> <p>20 A. No, it does not.</p> <p>21 Q. If you'll next go to Exhibit 15. And this is</p> <p>22 the paper by Lisa Littman titled, "Individuals treated</p> <p>23 for gender dysphoria with medical and/or surgical</p> <p>24 transition who subsequently detransitioned, a survey of</p> <p>25 100 detransitioners," do you have that in front of you</p>

<p style="text-align: right;">Page 234</p> <p>1 now?</p> <p>2 A. I do.</p> <p>3 Q. Okay. And do you recall being asked questions</p> <p>4 about this article and specifically your statement in</p> <p>5 your report that there is a growing number of</p> <p>6 detransitioners?</p> <p>7 A. Yes.</p> <p>8 Q. Okay. I'd like you to again privately read the</p> <p>9 first two paragraphs of that introduction and let me</p> <p>10 know when you are finished reading that.</p> <p>11 A. You said the first two paragraphs, right?</p> <p>12 Q. Yes, please. Do you know what, I think it's</p> <p>13 actually just one, but I was looking at it as two, but.</p> <p>14 A. Okay. I read the first paragraph, I read the</p> <p>15 first paragraph.</p> <p>16 Q. Okay. Is that first paragraph what you were</p> <p>17 citing to in your report talking about the growing</p> <p>18 number of detransitioners when you cited to Littman?</p> <p>19 A. Yes. And to me it, and to me it was the</p> <p>20 verification of, one verification of my, the first</p> <p>21 phrase of that sentence and I didn't think I could get</p> <p>22 Mr. Charles to understand what I meant. But Dr. Littman</p> <p>23 certainly has documented the rise in awareness about</p> <p>24 detransition, even though Dr. Littman was not talking</p> <p>25 about in her article the rate of, the rate, her hundred</p>	<p style="text-align: right;">Page 236</p> <p>1 some adolescents with gender dysphoria or gender</p> <p>2 incongruence, even though there are minimal published</p> <p>3 studies of gender affirming hormone treatments</p> <p>4 administered before age 13 and a half to 14 years. As</p> <p>5 with the care of adolescents equal to or greater than</p> <p>6 16 years of age, we recommend that an expert</p> <p>7 multidisciplinary team of medical and mental health</p> <p>8 professionals manage this treatment," and then there is</p> <p>9 a strong recommendation with a low quality evidence one</p> <p>10 circle filled in.</p> <p>11 Q. Okay. And I want you to then go to 3872, so the</p> <p>12 very next page. And in the bottom right-hand corner</p> <p>13 there's, "Method of development of evidence based</p> <p>14 clinical practice guidelines," do you see that?</p> <p>15 A. I do.</p> <p>16 Q. Okay. And if you'll go into that paragraph</p> <p>17 where there is depicted the cross filled circles?</p> <p>18 A. Yes.</p> <p>19 Q. Okay. And it says, "Cross filled circles</p> <p>20 indicate the quality of evidence such that one cross</p> <p>21 filled circle and three empty circles denotes very low</p> <p>22 quality evidence," is that correct?</p> <p>23 A. I can't exactly, I don't see where you're</p> <p>24 reading, but it's all very familiar to me, yes.</p> <p>25 Q. Okay. Well, can you find that on Page 3872</p>
<p style="text-align: right;">Page 235</p> <p>1 people did not represent rate, it represented 100 of</p> <p>2 the, of the phenomena that she has listed in the first</p> <p>3 paragraph. So to me the first paragraph is very</p> <p>4 accurate support for the, the first, the first phrase in</p> <p>5 that sentence that Mr. Charles highlighted.</p> <p>6 Q. Thank you. If you'll go to Exhibit 16 now.</p> <p>7 A. Okay.</p> <p>8 Q. And this is the Endocrine Society guidelines</p> <p>9 from 2017, is that right?</p> <p>10 A. Yes.</p> <p>11 Q. Okay. I'd like to direct your attention to</p> <p>12 page, and it's denoted in the top right-hand corner, of</p> <p>13 Page 3871.</p> <p>14 A. Okay, I'm on the page.</p> <p>15 Q. Okay. Do you recall being asked questions about</p> <p>16 statements in your report related to the Endocrine</p> <p>17 Society guidelines that stated that there was very low</p> <p>18 or low quality evidence for hormones?</p> <p>19 MR. CHARLES: Objection.</p> <p>20 A. Yes.</p> <p>21 Q. And actually, if you'll read it out loud, would</p> <p>22 you read it out loud and into the record recommendation</p> <p>23 2.5?</p> <p>24 A. "We recognize that there may compelling reasons</p> <p>25 to initiate sex hormone treatment prior to age of 16 in</p>	<p style="text-align: right;">Page 237</p> <p>1 where there are the actual cross filled circles?</p> <p>2 A. Yes.</p> <p>3 Q. Okay. And do you see the sentence that starts,</p> <p>4 "Cross filled circles indicate"?</p> <p>5 A. I'm looking. "Cross filled circles," yes, okay,</p> <p>6 I got it.</p> <p>7 Q. And it says, "Cross filled circles indicate the</p> <p>8 quality of the evidence such that one cross filled</p> <p>9 circle, three empty circles denotes very low quality</p> <p>10 evidence," do you see that?</p> <p>11 A. Yes.</p> <p>12 Q. Okay. If you go back up to recommendation 2.5,</p> <p>13 how many cross filled circles are there?</p> <p>14 A. I think there's one.</p> <p>15 Q. And as you just read, what does one cross filled</p> <p>16 circle denote?</p> <p>17 A. Very little, very low quality evidence.</p> <p>18 Q. Okay. Now you were also asked some questions</p> <p>19 about these guidelines as they compared to the</p> <p>20 guidelines from the Endocrine Society for pediatric</p> <p>21 obesity, do you remember that?</p> <p>22 A. Oh, yes.</p> <p>23 Q. Okay. Do you know what the recommendations are</p> <p>24 from the Endocrine Society related to pediatric</p> <p>25 bariatric surgery?</p>

<p style="text-align: right;">Page 238</p> <p>1 MR. CHARLES: Objection.</p> <p>2 A. I would have, I would have to look it up, Mr.</p> <p>3 David.</p> <p>4 Q. Okay. That's Exhibit 17, if you can go there.</p> <p>5 A. Okay, I'm scrolling through that article now.</p> <p>6 Q. If you'll go to Page 712, it's in the top</p> <p>7 left-hand corner.</p> <p>8 A. Okay.</p> <p>9 Q. And then if you look at 4.10, do you see that</p> <p>10 there?</p> <p>11 A. "We suggest a clinician should discontinue</p> <p>12 medication," is that what you're --</p> <p>13 Q. Oh, I'm sorry, 4.11. And go ahead and, and</p> <p>14 since it's a longer one, go ahead and read it to</p> <p>15 yourself and let me know when you're done reading it.</p> <p>16 A. Okay. Okay.</p> <p>17 Q. What is the level of recommendation for</p> <p>18 recommendation 4.11?</p> <p>19 A. It's a two with two filled in circles.</p> <p>20 Q. Okay. So what does the two denote?</p> <p>21 MR. CHARLES: Objection.</p> <p>22 A. We have to go back to the specific language.</p> <p>23 It's not a strong recommendation, I think it might be</p> <p>24 recommendation, but low, low quality evidence.</p> <p>25 Q. Okay. If you'll look at the, the right-hand</p>	<p style="text-align: right;">Page 240</p> <p>1 DSM-IV and DSM-V?</p> <p>2 MR. CHARLES: Objection, objection.</p> <p>3 A. Well, I would like to answer that question by</p> <p>4 reading the DSM-IV and DSM-IV-TR and DSM-V divides</p> <p>5 gender dysphoria into two different sections for</p> <p>6 children, for prepubertal children and for adolescents</p> <p>7 and adults, so there are separate ones. And so you must</p> <p>8 be -- can you, can you clarify what you're asking about,</p> <p>9 which, which group, or are you asking me about both? I</p> <p>10 think you might be asking me about just for children.</p> <p>11 Q. Well, and let's start there. So for children</p> <p>12 are there differences between the diagnostic criteria</p> <p>13 under the DSM-IV and the DSM-V?</p> <p>14 MR. CHARLES: Objection.</p> <p>15 A. There are different language, there's different</p> <p>16 language. Actually, I don't think I can quote the</p> <p>17 differences to you without having to review them myself.</p> <p>18 Q. Sure.</p> <p>19 A. And I don't have them in front of me, I don't</p> <p>20 have access to them.</p> <p>21 Q. That's okay, Doctor. Doctor, are you aware of</p> <p>22 any reviews or literature that's been published related</p> <p>23 to the prevalence of diagnoses for gender dysphoria</p> <p>24 under DSM-IV versus DSM-V?</p> <p>25 MR. CHARLES: Objection.</p>
<p style="text-align: right;">Page 239</p> <p>1 side of that same page you'll see that information over</p> <p>2 there, do you see that where it talks about one and two</p> <p>3 and the cross filled circles?</p> <p>4 MR. CHARLES: Objection.</p> <p>5 A. Oh, "We suggest," right.</p> <p>6 Q. So can you go ahead and read that and tell us</p> <p>7 what the two denotes.</p> <p>8 A. Okay. "In terms of the strength of</p> <p>9 recommendations, strong recommendations use the phrase</p> <p>10 'we recommend' and the number 1, and weak</p> <p>11 recommendations use the phrase 'we suggest' and the</p> <p>12 number 2."</p> <p>13 Q. And what was the recommendation for 4.11?</p> <p>14 A. Weak recommendation, two with low quality</p> <p>15 research behind it.</p> <p>16 MR. CHARLES: Objection.</p> <p>17 Q. Now, Doctor, you were, at the end of Mr.</p> <p>18 Charles' questioning you were asked a lot of questions</p> <p>19 about datasets before 2013, do you remember those</p> <p>20 questions?</p> <p>21 A. Yes.</p> <p>22 Q. Okay. When was the DSM-V published?</p> <p>23 A. 2000 -- May I think of 2013.</p> <p>24 Q. And can you tell us what the differences are as</p> <p>25 it relates to the diagnosis of gender dysphoria between</p>	<p style="text-align: right;">Page 241</p> <p>1 A. I'm aware there's been a lot of discussion about</p> <p>2 criticism or trying to conjure the ethical problem</p> <p>3 raised by Cantor's article and sort of operationalized</p> <p>4 by Debries and their Dutch protocol where there was a</p> <p>5 very distinct clinical recognition that the majority of</p> <p>6 children who are cross gender identified in grade school</p> <p>7 years will desist. And this is one of the reasons why</p> <p>8 the Dutch protocol did not start puberty blocking</p> <p>9 hormones until there was a development of puberty and an</p> <p>10 increased distress about puberty.</p> <p>11 And so they were providing cross, cross gender,</p> <p>12 I'm sorry, puberty blocking hormones at the minimum age</p> <p>13 of 14 because they were recognizing that with the truth</p> <p>14 of what the Cantor studies had shown that the majority</p> <p>15 of cross gender identified children, whether they met</p> <p>16 the DSM-IV or DSM-III criteria or not, they couldn't be</p> <p>17 predicted, the kids could not be predicted of who would</p> <p>18 persist and who would not persist.</p> <p>19 And so the Dutch were very careful about</p> <p>20 allowing children to go into puberty, to become more</p> <p>21 distressed. And then if they came from families that</p> <p>22 were psychologically supportive and families and</p> <p>23 children who would go through psychotherapy while they</p> <p>24 were getting puberty blocking hormones, then they would</p> <p>25 give those 70 children puberty blocking hormones.</p>



<p style="text-align: right;">Page 242</p> <p>1 So what's happening today unfortunately is that</p> <p>2 the Dutch protocol, which was very careful in who was</p> <p>3 included and who was excluded, this is not what is</p> <p>4 happening in America today. In America today kids as</p> <p>5 young as eight and nine are being given puberty blocking</p> <p>6 hormones and, and many of the kids who are given cross</p> <p>7 sex hormones are what we call rapid onset gender</p> <p>8 dysphoria. And some of these girls, biologic girls are</p> <p>9 having their breasts removed as young as 13 and 14.</p> <p>10 And this is totally not in keeping with the</p> <p>11 ethical problem of being unable to predict who's going</p> <p>12 to desist and who's not going to desist. So this a</p> <p>13 major problem in part of the grand controversy here</p> <p>14 which somehow I wasn't able to speak to during the</p> <p>15 interrogation earlier today.</p> <p>16 Q. Okay. Doctor, I don't have any further</p> <p>17 questions for you, but Mr. Charles might have some</p> <p>18 follow-up.</p> <p>19 MR. CHARLES: Let me take a -- actually, I</p> <p>20 think we're good.</p> <p>21 THE WITNESS: Thank you.</p> <p>22 VIDEO TECHNICIAN: Are we done?</p> <p>23 MR. CHARLES: Yes, Caleb. I mean, Kraig,</p> <p>24 yes.</p> <p>25 VIDEO TECHNICIAN: We're going off the</p>	<p style="text-align: right;">Page 244</p> <p>1 REPORTER'S CERTIFICATE</p> <p>2</p> <p>3 STATE OF MINNESOTA )</p> <p>4 ) ss.</p> <p>5 COUNTY OF WASHINGTON )</p> <p>6 I hereby certify that I reported the Zoom videotaped</p> <p>7 deposition of Dr. Stephen Levine on the 27th day of</p> <p>8 April 2022, and that the witness was by me first duly</p> <p>9 sworn to tell the whole truth;</p> <p>10 That the testimony was transcribed by me and is a</p> <p>11 true record of the testimony of the witness;</p> <p>12 That the cost of the original has been charged to</p> <p>13 the party who noticed the deposition, and that all</p> <p>14 parties who ordered copies have been charged at the same</p> <p>15 rate for such copies;</p> <p>16 That I am not a relative or employee or attorney or</p> <p>17 counsel of any of the parties, or a relative or employee</p> <p>18 of such attorney or counsel;</p> <p>19 That I am not financially interested in the action</p> <p>20 and have no contract with the parties, attorneys, or</p> <p>21 persons with an interest in the action that affects or</p> <p>22 has a substantial tendency to affect my impartiality;</p> <p>23 That the right to read and sign the deposition by</p> <p>24 the witness was reserved.</p> <p>25 WITNESS MY HAND AND SEAL THIS 27th day of May 2022.</p> <p></p> <p>Notary Public, Washington County, Minnesota My commission expires 1-31-2025</p>
<p style="text-align: right;">Page 243</p> <p>1 record at 5:50 p.m.</p> <p>2 (Proceedings concluded for the day at</p> <p>3 4:50 p.m., 04-27-2022)</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 245</p> <p>1 Veritext Legal Solutions</p> <p>2 1100 Superior Ave</p> <p>3 Suite 1820</p> <p>4 Cleveland, Ohio 44114</p> <p>5 Phone: 216-523-1313</p> <p>6 May 11, 2022</p> <p>7 To: Ms. Bandy</p> <p>8 Case Name: Fain, Christopher Et Al v. Crouch, William Et Al</p> <p>9 Veritext Reference Number: 5176996</p> <p>10 Witness: Dr. Stephen Levine Deposition Date: 4/27/2022</p> <p>11 Dear Madam:</p> <p>12 Enclosed please find a deposition transcript. Please have the witness</p> <p>13 review the transcript and note any changes or corrections on the</p> <p>14 included errata sheet, indicating the page, line number, change, and</p> <p>15 the reason for the change. Have the witness' signature notarized and</p> <p>16 forward the completed page(s) back to us at the Production address</p> <p>17 shown</p> <p>18 above, or email to production-midwest@veritext.com.</p> <p>19 If the errata is not returned within thirty days of your receipt of</p> <p>20 this letter, the reading and signing will be deemed waived.</p> <p>21 Sincerely,</p> <p>22 Production Department</p> <p>23</p> <p>24</p> <p>25 NO NOTARY REQUIRED IN CA</p>

Page 246	Page 248
<p>1 DEPOSITION REVIEW CERTIFICATION OF WITNESS</p> <p>2</p> <p>3 ASSIGNMENT REFERENCE NO: 5176996 CASE NAME: Fain, Christopher Et Al v. Crouch, William Et Al DATE OF DEPOSITION: 4/27/2022</p> <p>4 WITNESS' NAME: Dr. Stephen Levine In accordance with the Rules of Civil Procedure, I have read the entire transcript of my testimony or it has been read to me. I have made no changes to the testimony as transcribed by the court reporter.</p> <p>8</p> <p>9 Date _____ Dr. Stephen Levine 10 Sworn to and subscribed before me, a Notary Public in and for the State and County, 11 the referenced witness did personally appear and acknowledge that:</p> <p>12 They have read the transcript; 13 They signed the foregoing Sworn Statement; and 14 Their execution of this Statement is of their free act and deed.</p> <p>15 I have affixed my name and official seal 16 this _____ day of _____, 20____.</p> <p>17 _____ 18 Notary Public 19 _____ Commission Expiration Date</p> <p>20 21 22 23 24 25</p>	<p>1 ERRATA SHEET VERITEXT LEGAL SOLUTIONS MIDWEST</p> <p>2 ASSIGNMENT NO: 5176996</p> <p>3 PAGE/LINE(S) / CHANGE /REASON</p> <p>4 _____ 5 _____ 6 _____ 7 _____ 8 _____ 9 _____ 10 _____ 11 _____ 12 _____ 13 _____ 14 _____ 15 _____ 16 _____ 17 _____ 18 _____ 19 _____</p> <p>20 Date _____ Dr. Stephen Levine 21 SUBSCRIBED AND SWORN TO BEFORE ME THIS _____ 22 DAY OF _____, 20____.</p> <p>23 _____ Notary Public</p> <p>24 _____ Commission Expiration Date</p> <p>25</p>
<p>Page 247</p> <p>1 DEPOSITION REVIEW CERTIFICATION OF WITNESS</p> <p>2</p> <p>3 ASSIGNMENT REFERENCE NO: 5176996 CASE NAME: Fain, Christopher Et Al v. Crouch, William Et Al DATE OF DEPOSITION: 4/27/2022</p> <p>4 WITNESS' NAME: Dr. Stephen Levine In accordance with the Rules of Civil Procedure, I have read the entire transcript of my testimony or it has been read to me. I have listed my changes on the attached Errata Sheet, listing page and line numbers as well as the reason(s) for the change(s). I request that these changes be entered as part of the record of my testimony.</p> <p>10 I have executed the Errata Sheet, as well as this Certificate, and request and authorize that both be appended to the transcript of my testimony and be incorporated therein.</p> <p>13 Date _____ Dr. Stephen Levine</p> <p>14 Sworn to and subscribed before me, a Notary Public in and for the State and County, 15 the referenced witness did personally appear and acknowledge that:</p> <p>16 They have read the transcript; They have listed all of their corrections in the appended Errata Sheet; 18 They signed the foregoing Sworn Statement; and 19 Their execution of this Statement is of their free act and deed. 20 I have affixed my name and official seal 21 this _____ day of _____, 20____.</p> <p>22 _____ 23 Notary Public 24 _____ Commission Expiration Date</p> <p>25</p>	

[&amp; - 2]

Page 1

<b>&amp;</b>	<b>105</b> 2:6,22 5:24	<b>12:30</b> 202:1	202:22 203:10
<b>&amp;</b> 22:21 28:2,3,12	<b>107</b> 37:13 218:8	<b>12:33</b> 105:25	238:4
28:16,24 37:1	<b>109</b> 218:7,8	<b>12:34</b> 106:3	<b>177</b> 7:3
59:3,5,7,8 63:17	<b>10:29</b> 50:22	<b>12:43</b> 111:4	<b>17936</b> 244:23
63:24 64:2	<b>10:36</b> 51:2	<b>12th</b> 42:1	<b>17th</b> 205:23
<b>0</b>	<b>10:41</b> 83:17	<b>13</b> 6:12 75:11 84:4	<b>18</b> 4:24 7:5 82:4,7
<b>001</b> 219:10,11,13	<b>10th</b> 77:6 79:10	104:17,21 112:21	82:8 91:10 189:3
<b>00740</b> 1:8 9:7	81:25 82:16 83:1	113:3 124:12	189:5 205:10,12
<b>01</b> 61:25,25 62:1	84:17,25	125:8 140:19,21	<b>180</b> 198:24
<b>04-27-2022</b> 243:3	<b>11</b> 6:6 76:15 77:25	166:4 236:4 242:9	<b>1820</b> 245:2
<b>1</b>	90:10,12 91:10	<b>13.07</b> 225:13	<b>1862</b> 132:13
<b>1</b> 4:23 9:3 18:9,18	99:2,7 125:20	<b>131</b> 6:10	<b>189</b> 7:5,7
42:6 43:1 58:13	201:1 221:5,22	<b>133</b> 4:16	<b>19</b> 7:7 47:25 78:8
58:25 62:4 66:19	222:1 231:24,25	<b>134</b> 4:16	161:23 189:18
71:9 90:6,8 99:5	232:24 245:4	<b>139</b> 225:9 226:6	<b>193</b> 7:10
111:16 112:8,10	<b>1100</b> 245:1	<b>14</b> 4:15 6:14 77:19	<b>194</b> 7:13
115:12 119:22	<b>111</b> 4:9	125:16 130:2	<b>1970</b> 60:19
126:13 130:2	<b>113</b> 6:4 140:12	155:22,25 190:2	<b>1972</b> 222:9
132:13 136:3	<b>119</b> 4:15	236:4 241:13	<b>1974</b> 57:7 58:5,14
152:5 168:18	<b>11:33</b> 106:1	242:9	62:8 147:11
169:23 182:8	<b>11:41</b> 83:16	<b>140</b> 6:12	<b>1975</b> 226:10
183:13 188:1	<b>11:43</b> 111:5	<b>1411</b> 3:16	<b>1978</b> 222:14
191:16,18 194:24	<b>11:45</b> 83:13	<b>15</b> 6:17 78:18	<b>1979</b> 222:15
228:17 239:10	<b>11:47</b> 83:21	86:10 161:14,15	<b>1986</b> 222:18
<b>1-2-3</b> 198:25	<b>12</b> 6:9 43:6 62:21	228:13,14 233:21	226:18
<b>1-31-2025</b> 244:25	75:10 78:18 80:10	<b>154</b> 130:23	<b>1987</b> 222:19,20
<b>1/1,000</b> 219:14	84:8 99:9 111:15	<b>155</b> 6:15	<b>1989</b> 225:12
<b>10</b> 4:8 6:1 113:7	112:11,14 131:9	<b>158</b> 2:6,22	226:11
218:9,14 230:2	131:24 166:7,11	<b>16</b> 6:22 80:24	<b>1993</b> 54:25 57:7
<b>10/4/21</b> 126:14	233:8,14,16	125:13 164:2	62:8 63:22 226:18
<b>100</b> 5:21 6:20	<b>12.99</b> 225:11	176:14 201:1	<b>1999</b> 147:18
37:12 160:2	<b>1208</b> 3:3	235:6,25 236:6	<b>1:16</b> 111:11
161:22 233:25	<b>121</b> 117:24 118:9	<b>161</b> 6:20	<b>1:17</b> 111:25
235:1	118:13 199:3	<b>163</b> 4:16 6:25	<b>1:18</b> 112:3
<b>100th</b> 219:10	231:7	188:13	<b>1:26</b> 150:1
<b>102</b> 188:3,3	<b>123</b> 198:19,25,25	<b>164</b> 188:13	<b>2</b>
<b>103</b> 192:19,21	199:1,1 200:13	<b>165</b> 192:25	<b>2</b> 5:1 20:25 50:24
<b>104</b> 130:22 165:8	<b>125</b> 6:7	<b>168</b> 114:25	61:22 62:3,4
169:21 170:1	<b>12:16</b> 111:6	<b>17</b> 7:1 33:25 80:25	66:18,23 77:11
171:12	<b>12:17</b> 112:1	90:12 97:11,12	79:23 90:5 168:20
		109:13 177:10,11	183:14 200:14

[2 - 39.15]

Page 2

239:12 <b>2,300</b> 217:9 <b>2.5</b> 235:23 237:12 <b>2/25/19</b> 7:13 <b>20</b> 5:1 7:9 17:4 47:25 99:9 109:13 193:10,14 213:10 246:16 247:22 248:22 <b>20.58</b> 225:12 <b>200</b> 3:16 45:8 103:12 138:21 <b>2000</b> 239:23 <b>2000s</b> 151:6 <b>2002</b> 225:14 226:12 <b>2005</b> 151:6,24 <b>2008</b> 222:21,22 <b>2009</b> 172:7 226:10 226:19,24 <b>2011</b> 114:17 224:2 226:19,24,24 229:12 231:22 <b>2012</b> 222:23 223:1 <b>2013</b> 222:24 223:9 223:14,17,20 224:9 227:12 239:19,23 <b>2015</b> 228:2,3 <b>2016</b> 114:17 130:8 130:22 167:1 217:7 228:3 <b>2017</b> 49:15 63:24 164:22 166:25 167:1 177:22 199:12 235:9 <b>2018</b> 188:21,21 <b>2019</b> 48:11 49:11 49:25 194:19 198:6	<b>2020</b> 48:12 108:2 153:1 <b>2021</b> 22:17 30:24 30:25 34:25 41:16 42:1 43:6 47:4 51:17,22 76:14 77:6 106:13 125:15 201:11 205:23 217:8 218:17 219:19 223:3 <b>2022</b> 1:18 9:2 35:2 43:11,17 51:1 83:20 111:10 150:4 185:23 218:6 244:7,18 245:4 <b>21</b> 7:12 23:16,23 32:20 50:3 52:25 78:22 80:5 81:25 82:23 83:4 112:13 148:5 161:24 194:10,12 209:19 231:16 <b>21,433</b> 39:11 <b>212.809.8585</b> 2:24 <b>214.219.8585</b> 2:16 <b>216-523-1313</b> 245:3 <b>217</b> 7:16 <b>22</b> 7:15 50:3 104:22 217:20,23 217:25 <b>221</b> 7:20 98:17 <b>224</b> 7:23 <b>227</b> 8:1 <b>229</b> 4:10 <b>23</b> 7:18 26:3,7 27:12 124:15 125:22 221:1	<b>231</b> 4:16 <b>232</b> 4:16 <b>233</b> 4:16 <b>235</b> 4:16 <b>237</b> 157:2 159:21 160:1 <b>238</b> 4:16 <b>239</b> 4:16 <b>24</b> 7:22 78:15 130:3,5 166:7,11 224:13,17 <b>240</b> 4:16 140:9 <b>25</b> 8:1 79:13 227:16 <b>25301</b> 3:17 <b>25th</b> 194:18 <b>26</b> 7:5 43:11 136:2 136:5,6,7 153:8 154:5,16 209:14 209:20,21 211:1 214:7 220:2 <b>26101</b> 3:4 <b>26th</b> 44:3 <b>27</b> 1:18 9:2 51:1 111:10 150:4 185:23 211:1 214:5,7,8 <b>27th</b> 83:20 244:6 244:18 <b>28</b> 202:15 215:4 <b>29</b> 202:16 203:3 218:6 <b>2:26</b> 149:25 <b>2:31</b> 185:20 <b>2:32</b> 150:5 <b>2:47</b> 190:10 <b>2nd</b> 106:12 <b>3</b> <b>3</b> 5:3 25:23,24 31:22 32:14 41:24 42:5,11,14,19 53:3	54:5 58:18,19 61:22 62:3 66:24 83:18 198:16 201:17 <b>3.0</b> 179:16 <b>3.2</b> 179:18 <b>3.33</b> 225:11 <b>3.5</b> 151:3 <b>3/29/22</b> 7:16 <b>3/30/22</b> 5:5 <b>30</b> 81:10 120:19 121:5 150:9 201:24 202:9 203:3 217:7 <b>30,000</b> 207:13 <b>30030</b> 2:7,23 <b>301</b> 31:22 <b>304.345.1400</b> 3:18 <b>304.485.3058</b> 3:5 <b>30th</b> 22:6 50:11,12 53:16 62:15 63:8 198:1 201:6,7,14 201:19 202:14 <b>31</b> 177:22 <b>32</b> 226:18 227:3 <b>3355</b> 162:10 <b>34</b> 231:21 <b>35</b> 109:24 110:13 139:21 145:2 198:2 199:11,18 <b>3500</b> 2:14 <b>36</b> 231:21,22 <b>37</b> 120:12 <b>38</b> 150:8,10,11 155:13 <b>3871</b> 235:13 <b>3872</b> 167:19,20 236:11,25 <b>3873</b> 165:10 <b>39.15</b> 225:13
--	--	---	---

[3:20 - abstract]

Page 3

<b>3:20</b> 1:8 9:7 <b>3:31</b> 185:19 <b>3:36</b> 185:15 <b>3:39</b> 185:24 <b>3:43</b> 220:16 <b>3:47</b> 190:9,12  <b>4</b>  <b>4</b> 5:7 64:7 65:6 111:8 125:15 151:3 199:5 226:2 <b>4,000</b> 210:1 <b>4.10</b> 238:9 <b>4.11</b> 238:18 239:13 <b>4.11.</b> 238:13 <b>4/27/2022</b> 245:8 246:3 247:3 <b>40</b> 176:8 <b>41</b> 178:6,9 <b>42</b> 221:3 <b>44114</b> 245:2 <b>470.225.5341</b> 2:8 <b>48</b> 80:14 202:11 <b>49</b> 177:25 231:16 <b>4:04</b> 225:22 <b>4:15</b> 229:20 <b>4:43</b> 220:15 <b>4:50</b> 220:12 243:3 <b>4:54</b> 220:18 <b>4:56</b> 220:21  <b>5</b>  <b>5</b> 5:9 47:13,19 51:7 76:23,24 83:24 124:17 150:2 <b>5,000</b> 30:7 <b>50</b> 46:8 62:20 63:10 77:18 80:14 145:10 154:12,12 188:1,2,4 200:23	<b>500</b> 2:14 <b>501</b> 31:22 32:14 <b>51</b> 77:17,18 81:15 81:15 84:1 164:25 170:2 192:18 207:1 209:14,22 <b>5176996</b> 1:25 245:7 246:2 247:2 248:2 <b>52</b> 78:19 169:20,23 169:25 170:2 <b>53</b> 5:5 79:20,23 215:5 <b>54</b> 79:18 216:23 <b>55</b> 84:2,4 <b>5:04</b> 225:21 <b>5:08</b> 225:24 <b>5:15</b> 229:19 <b>5:25</b> 229:22 <b>5:50</b> 243:1  <b>6</b>  <b>6</b> 5:12 42:20 81:16 81:18 88:16,19 145:8,12 148:21 185:21 <b>6,000</b> 210:1 <b>60</b> 75:14 <b>60s</b> 224:1 229:11 <b>61</b> 228:7 <b>618,000</b> 217:14 218:25 <b>618,691</b> 218:18,21 <b>64</b> 5:7 <b>686</b> 217:8 218:25 219:18 <b>6th</b> 147:19  <b>7</b>  <b>7</b> 5:15 97:4,5 106:18 112:17 114:20 115:7	116:11,19 148:20 230:14 231:4 <b>7.49</b> 225:11 <b>7/2/21</b> 5:24 <b>70</b> 103:5 139:23,24 241:25 <b>70s</b> 151:5 229:11 <b>71</b> 4:15 139:25 226:19 <b>710</b> 179:14 <b>712</b> 177:24,25 178:1,14 182:13 183:2 238:6 <b>73</b> 4:15 <b>74</b> 57:25 68:16 <b>75219</b> 2:15 <b>76</b> 5:10 <b>77</b> 120:11,12 121:24 226:16 <b>79</b> 150:12  <b>8</b>  <b>8</b> 5:19 100:21,23 100:24 105:3 113:24 114:3 116:12 149:15 154:25 230:4 <b>80</b> 103:5 198:22 <b>80s</b> 37:18 151:5 <b>85</b> 4:15 <b>86</b> 4:15 <b>88</b> 5:13 <b>8:00</b> 1:19 <b>8:14</b> 18:8 <b>8:33</b> 18:24 <b>8:59</b> 9:2  <b>9</b>  <b>9</b> 5:23 105:14 <b>9/10/21</b> 5:10 <b>90s</b> 151:6	<b>91</b> 4:15 <b>92</b> 4:15 <b>93</b> 4:15 58:1 68:16 <b>94</b> 4:15 <b>97</b> 5:17 <b>98</b> 228:7 <b>99</b> 97:15 <b>9:14</b> 18:7 <b>9:29</b> 50:23 <b>9:33</b> 18:11,23 <b>9:34</b> 19:1  <b>a</b>  <b>a.m.</b> 1:19 9:2 18:7 18:8,11,23,24 19:1 50:23 51:2 83:16 83:17,21 106:1 111:5 <b>aap</b> 7:19 221:21 <b>abandon</b> 115:9 <b>abandoning</b> 100:6 <b>abigail</b> 125:13 126:15 129:17 232:3 <b>ability</b> 92:2 <b>able</b> 39:22 68:20 69:23 70:6 71:23 124:9,9 131:17 202:6 217:22 242:14 <b>absence</b> 132:12,19 134:7 <b>absent</b> 228:9 <b>absolutely</b> 36:23 125:10 <b>abstract</b> 97:23 98:1,6 115:14 156:19,20 157:11 158:19 161:25 162:8 224:25 225:1
--	---	---	---



<b>academic</b> 176:17 <b>accept</b> 67:21,23 219:5 <b>accepted</b> 36:16 67:17 68:9 228:3 <b>accepting</b> 93:7 <b>accepts</b> 68:4 <b>access</b> 35:6,9,11 35:13,16,22,25 36:17 39:10 68:25 69:6,23 70:6 71:23 73:3,9,10,14 73:15,18 74:7 94:17 99:15 100:25 123:3,23 124:9,9 203:23 215:16 240:20 <b>accessed</b> 191:14 <b>accolade</b> 67:18 <b>account</b> 202:8 <b>accumulating</b> 38:13 <b>accuracy</b> 195:20 <b>accurate</b> 23:22 24:23 26:21,22 48:4 54:11 63:11 65:23 66:1 76:16 201:8 235:4 <b>accurately</b> 25:20 52:24 198:9 <b>achieve</b> 136:23 <b>acknowledge</b> 150:13 246:11 247:16 <b>acknowledges</b> 192:10 <b>acquainted</b> 176:22 <b>acronym</b> 63:15 133:24 134:4 <b>act</b> 132:14 246:14 247:20	<b>action</b> 1:8 169:17 170:17,25 174:6 174:13 244:14,15 <b>activism</b> 124:25 <b>activists</b> 130:10,15 <b>activities</b> 102:13 <b>actual</b> 142:13,15 175:4 200:15 237:1 <b>adapters</b> 122:18 <b>add</b> 20:12 <b>added</b> 34:6 179:22 179:23 <b>addiction</b> 226:9 <b>adding</b> 113:9 <b>addition</b> 120:22 <b>additional</b> 22:15 67:11 79:9,25 80:4 81:25 154:2 160:2 <b>additions</b> 25:1 <b>address</b> 140:15 188:22 245:15 <b>adequate</b> 74:18 144:18 203:24 <b>adequately</b> 155:6 <b>adjusting</b> 192:2 <b>administered</b> 236:4 <b>administering</b> 170:19 171:3 <b>administrating</b> 171:16 <b>administrative</b> 28:6 134:5 135:15 <b>admission</b> 162:24 163:18 <b>admitted</b> 124:24 <b>adolescence</b> 88:7 221:9	<b>adolescent</b> 29:19 44:19 75:15 79:25 80:16,17,22 143:13 151:22 <b>adolescents</b> 7:10 7:13,19 22:24 26:14 27:5,23 29:14 33:4,4 39:21 44:18,19 51:11,18 62:20,25 62:25 63:5,10 78:9,11,23 80:10 101:10 150:15,19 150:21 154:15 157:24 173:6 194:1,18 197:21 197:23 212:3 221:21 226:11 236:1,5 240:6 <b>adopt</b> 130:10 <b>adopted</b> 140:1 <b>adult</b> 61:9 66:11 81:19,22,25 82:5,7 82:9,11,14,14,21 82:25 84:7 <b>adults</b> 22:24 27:3 29:21,25 33:6 64:4 86:8 88:7,9 101:10,22 122:7 123:1,8 127:12 144:14 157:24 170:20 171:5,17 173:10 207:17 214:10 226:11 240:7 <b>advance</b> 13:23 <b>advancement</b> 67:15,16 <b>adverse</b> 186:22 <b>advice</b> 195:16 200:8	<b>advocacy</b> 44:24 99:20,22 124:20 128:2 <b>advocate</b> 88:10 99:15 <b>advocating</b> 204:3 <b>affect</b> 244:16 <b>affiliate</b> 66:10 <b>affiliated</b> 61:5,15 199:24 <b>affirm</b> 146:9 202:21 203:11 <b>affirmation</b> 108:10 145:13 188:19 199:10 201:9 203:22 <b>affirmative</b> 92:23 143:14 160:8 173:15 202:20 203:9 <b>affirmatively</b> 48:21,25 <b>affirmed</b> 110:2 <b>affirming</b> 7:9,12 12:22 13:5,14 14:5,11,21,23 49:15 84:7,9 85:6 89:16,17 93:21 105:10 110:5 125:2,11 130:12 144:25 145:1,11 145:15 188:8 193:25 194:17 203:5 216:16 232:20 233:3,18 236:3 <b>affirms</b> 128:20 <b>affixed</b> 246:15 247:21 <b>affluent</b> 68:25 74:23,24
--	---	--	--

[afternoon - approximately]

Page 5

<b>afternoon</b> 4:9 111:7	118:12,18 120:17 222:21,24 223:1	40:8 41:8 43:20 43:22 45:18 51:16	<b>appear</b> 98:8 113:25 119:18
<b>age</b> 76:15 77:25 225:11,12 235:25 236:4,6 241:12	225:5 245:6,6 246:3,3 247:3,3	52:5 58:17,23 69:25 71:1 72:13 78:1,2,15 80:2,3 80:23 81:23 82:13 84:7,20 85:2,10 86:23 87:11 92:6 94:8,21 102:13,25 103:8,24 104:13 108:22 116:23 120:10 136:17 137:6 159:1 161:8 161:10 163:10,15 163:16 164:17 174:19 184:25 187:12,13,22,23 187:23 199:10 200:1,18,22,25,25 201:3,23 206:23 207:16 208:13 209:2 217:16,17 240:3	121:12 179:11 246:11 247:15
<b>agencies</b> 30:2	<b>alcoholism</b> 101:24		<b>appearances</b> 2:1
<b>ago</b> 17:7 50:8 57:4 80:23 81:10 84:8 97:21 103:5,5,12 103:15 106:16 119:14 143:4 160:10 199:11 201:6,7	<b>align</b> 117:19 <b>alive</b> 67:4 <b>allayed</b> 127:20 <b>allege</b> 108:10 <b>allow</b> 128:17 <b>allowed</b> 106:25 <b>allowing</b> 35:23 123:3 241:20		<b>appeared</b> 64:23 164:3
<b>agree</b> 12:16 14:1 99:25 100:2 114:10,11 124:11 126:25 174:18 182:10 183:19,19 197:15 219:4 223:24	<b>allows</b> 108:7 <b>ambiguity</b> 135:14 <b>ambivalence</b> 70:16,23 71:4,10 71:19,24 72:5,5 <b>ambivalent</b> 87:24 <b>amenable</b> 12:18 <b>america</b> 208:21 242:4,4 <b>american</b> 42:16 66:25 67:9 143:21 191:4		<b>appears</b> 98:1,5,15 105:3 119:21 121:14 124:22
<b>agreed</b> 69:11 107:22 115:18 227:6			<b>appended</b> 247:11 247:18
<b>agreeing</b> 14:16			<b>appendix</b> 222:2,5
<b>agreement</b> 115:1			<b>apply</b> 44:14
<b>ahead</b> 10:6 21:11 31:11 50:19 64:25 65:18 70:10,20,22 93:21,21 99:4,8 114:13 136:2 194:20 208:6 209:6 238:13,14 239:6	<b>amount</b> 16:12,13 31:21 <b>analysis</b> 110:11 158:18 200:3 201:9 <b>analyze</b> 38:21 156:23 157:11 <b>anatomy</b> 81:9 96:21 <b>anecdotal</b> 108:16 108:23 110:6 <b>ann</b> 3:13 9:23 <b>answer</b> 10:24 11:9 14:19 25:10 30:1 30:14 31:11 37:19 38:12,14 40:2,2,4	<b>answered</b> 40:17 41:6 79:11 92:16 187:19 207:21 <b>answering</b> 72:7 95:8 163:11,12 <b>answers</b> 138:10 <b>anxiety</b> 16:12 101:24 <b>anybody</b> 45:9 68:12 110:4 154:17 <b>anyway</b> 149:8 <b>apart</b> 16:14 76:11 <b>apologies</b> 196:11 <b>apologize</b> 20:16 154:4 155:7 163:15	<b>approach</b> 143:5,7 143:13,23 144:4 144:12,13 <b>approached</b> 32:20 115:23 <b>approaches</b> 42:15 <b>appropriate</b> 60:5 86:3,14 174:20 <b>appropriateness</b> 85:21 <b>approval</b> 84:13 <b>approve</b> 20:13 <b>approves</b> 84:20 <b>approximate</b> 78:12 <b>approximately</b> 30:22 48:11 52:22

[approximately - authorize]

Page 6

54:25 63:10 81:19 81:24 99:12 177:23 <b>april</b> 1:18 9:2 51:1 83:20 111:10 150:4 185:23 223:3 244:7 <b>apropos</b> 202:4 <b>archives</b> 22:16 <b>area</b> 58:7 <b>argue</b> 186:10 <b>argument</b> 127:8 <b>arising</b> 195:21 <b>arrived</b> 34:9 <b>arrow</b> 21:6 42:9 <b>article</b> 6:4,10,15 7:7,13,23 8:1 16:6 16:8,9,15,16,17,18 22:20 23:6,15 30:8,20 31:16 32:2,21 34:7,11,21 35:12,16,20,23 36:3,12,13 37:3,6 37:9,11 39:9 40:14 51:17 97:18 97:20,21 98:8,15 101:8 104:18,19 106:5 107:8 108:6 109:16,18,18 112:6 117:22 121:8,8,13,14,21 125:13 126:7,15 126:16 128:3 129:18 141:1 155:16,18 156:5,9 159:14,15,16 160:4,5 199:12 221:16 222:2 223:1 224:18 226:2 227:14,19 227:25 228:4,11	228:13,21,24 232:3,6 234:4,25 238:5 241:3 <b>articles</b> 15:15,16 16:3 22:13,13 33:8,16,23 34:5,14 34:19,23 37:12,13 37:17 100:11 216:12,13 <b>articulated</b> 108:2 <b>asian</b> 143:22 <b>aside</b> 90:13 <b>asked</b> 15:4,5,7 20:11 27:9,11 33:14 61:11 72:10 78:17 95:9 131:12 136:24 149:14 227:7 230:7,12 232:7,9 233:13 234:3 235:15 237:18 239:18 <b>asking</b> 14:6 32:14 72:6,6 87:13 93:2 107:17,21 118:24 119:10,16,16 130:20 134:14 138:4 151:25 152:8 153:19 158:8,19 159:19 163:17 167:3,4 173:21 176:9,9 184:21 187:17 188:17 206:11,22 207:6,13,25 210:7 212:4 213:3 214:1 214:1 240:8,9,10 <b>asmithcarrington</b> 2:17 <b>aspect</b> 42:17 128:21	<b>aspects</b> 39:12 199:22 <b>aspirations</b> 91:15 92:22 <b>aspire</b> 81:6 95:13 <b>aspired</b> 92:2 <b>asserted</b> 204:10 <b>asserting</b> 158:14 <b>assertion</b> 100:7 150:18 158:5,8 167:7 198:2 215:21 <b>assertions</b> 91:14 158:13 161:2 <b>assess</b> 116:1 162:18 163:18 <b>assessed</b> 119:9 225:10 226:7 <b>assessing</b> 162:25 <b>assessment</b> 6:3 7:1 113:2,21 177:18 188:20 226:11 <b>assigned</b> 151:8 226:6 <b>assignment</b> 131:23 246:2 247:2 248:2 <b>assistant</b> 54:19 <b>associated</b> 209:25 <b>association</b> 42:16 67:1,10 99:23 116:10 147:17 <b>assume</b> 153:4 <b>assumed</b> 195:20 <b>assuming</b> 41:3 91:6 97:19 225:2 225:5 <b>assumptions</b> 103:21 <b>assures</b> 211:13 <b>athletics</b> 48:18,20 50:13,16	<b>atlanta</b> 2:23 <b>attached</b> 8:4,5 247:7 <b>attack</b> 128:18 <b>attacks</b> 128:15 <b>attainable</b> 91:17 93:6 <b>attempts</b> 94:13 <b>attendance</b> 46:2,6 <b>attended</b> 66:8 <b>attention</b> 126:12 157:20 235:11 <b>attorney</b> 9:18 244:12,13 <b>attorney's</b> 23:10 <b>attorneys</b> 17:2,15 19:15,18,19,23,25 20:3,9 244:15 <b>attracted</b> 103:1 <b>attractions</b> 102:12 <b>attractive</b> 129:6 <b>august</b> 205:12 <b>australia</b> 152:12 152:13 <b>author</b> 39:4 113:21 120:3 126:22 142:8 163:18 <b>authoritative</b> 99:24 <b>authoritatively</b> 209:2 <b>authorities</b> 188:7 <b>authority</b> 106:17 188:21 <b>authorization</b> 69:5 70:5,7 71:18 80:16,22 84:6,9 93:10 139:16 <b>authorize</b> 69:12 136:15 139:10
--	---	--	---

[authorize - believe]

Page 7

205:2 206:12,15 208:4 247:11 <b>authorized</b> 71:6 73:14 80:6 205:1 <b>authors</b> 16:19,20 16:23 112:25 114:20 116:19,20 152:11 170:6,7,9 194:5 195:14 228:23 231:21,22 <b>autism</b> 200:6 <b>autistic</b> 110:3 202:3 <b>auvil</b> 3:1,6 <b>available</b> 17:19 20:6 40:9 89:4 103:6 107:9 113:10 123:5 166:2 182:16 183:7 184:12,15 184:24 185:11 189:21 193:8,11 220:23 224:14 227:17 <b>avatara</b> 2:11 9:18 <b>ave</b> 2:6 245:1 <b>avenue</b> 2:14,22 <b>average</b> 169:14 170:13,18 171:3 171:16 173:18 174:3 176:21 <b>avoiding</b> 179:20 <b>aware</b> 14:7 17:20 21:24 31:9 47:23 67:12 70:23 85:17 86:15 89:15,19 98:7 126:6 129:16 150:22 164:7 172:22 173:12,14 192:4,9 214:12 217:13 240:21	241:1 <b>awareness</b> 201:8 234:23 <b>b</b> <b>b</b> 3:14 4:24 5:10 17:12 77:5 222:12 <b>back</b> 18:2,10,20 18:25 19:25 21:6 21:6 25:18 36:14 41:11 42:7,9 51:1 51:10 53:22 58:21 58:22 64:10 66:18 67:19 69:12 76:10 79:20 81:15 83:13 83:20 89:20 90:4 99:1,3,5 104:16 106:2 111:10,20 112:2,8 115:12 116:12 121:23 125:18,24,24 130:1 136:4 139:2 139:20,24 143:3 144:20,23 149:19 150:4,7 169:21 170:21 182:11,12 185:15,23 187:25 189:23 190:11 191:15 200:10,11 203:19 204:20 208:11,12 209:11 220:12,17 223:25 225:23 226:1 229:11,21 232:13 237:12 238:22 245:15 <b>background</b> 74:18 110:3 <b>backing</b> 63:14 <b>backup</b> 54:13 <b>backwards</b> 190:4	<b>bad</b> 216:11 <b>bakwin</b> 228:24,24 <b>balance</b> 102:11 165:5 <b>ban</b> 14:15 91:18 94:17,23 95:1 134:17,21,22 <b>bandy</b> 3:12 9:25 9:25 17:10,12,13 17:13 245:5 <b>banned</b> 135:4,5 192:1 <b>banning</b> 50:9 91:22 122:6 123:1 123:8 133:10 <b>barbara</b> 46:19 <b>bariatric</b> 237:25 <b>base</b> 143:14,15 <b>based</b> 25:16 30:12 31:1 40:9,15 45:2 45:14 46:13 67:11 81:8 96:11 103:11 106:6 108:23 110:11 120:21 121:7 123:16 126:20 128:20,24 132:22 133:15 134:10 138:16 146:15 152:7 154:21 165:2 168:1 175:3 178:15 181:12 182:13,21 184:11 184:23 205:13 206:18,18 236:13 <b>baseline</b> 166:7,11 <b>basic</b> 5:16 <b>basically</b> 183:5 201:24 <b>basing</b> 145:22,24 146:13	<b>basis</b> 44:20,21 45:9 92:13 107:11 107:13 117:24 132:16 133:20,21 135:13 143:19 145:22 147:7,8 158:12 160:8 176:12 211:14 <b>beane</b> 3:8 7:16 218:5 <b>beard</b> 49:5 <b>bedroom</b> 199:19 <b>began</b> 34:1,5,25 54:21 <b>beginning</b> 30:24 32:24 44:12 90:12 99:18 107:25 128:16 130:16 163:6 165:23 168:4 215:4 216:23 <b>begins</b> 42:20 78:8 91:12 114:12 162:16 165:19 168:6 178:23 229:11 <b>behalf</b> 1:5 2:3 3:8 9:17,19,22,24 10:1 203:19 <b>behavior</b> 22:17 <b>behavioral</b> 47:6 151:16 <b>beings</b> 96:18,20 101:13 103:6,7 <b>belief</b> 92:23 182:8 182:21 184:11 203:17 <b>beliefs</b> 93:18 182:8 184:23 185:2,5,6 <b>believe</b> 34:10 49:18 50:4 59:20
--	---	---	--

74:15 84:17 85:3 90:5 103:5 118:6 122:1 126:25 128:9 137:24 152:12 155:17 172:23 182:1 185:7 190:25 203:20 218:14 <b>believed</b> 202:20 203:9 <b>believes</b> 93:17 <b>bell</b> 26:21 <b>belong</b> 60:4 <b>belonged</b> 81:7 <b>belongs</b> 200:2 214:25 <b>benchmark</b> 115:5 <b>beneficial</b> 69:17 69:18,22 70:4 73:22 124:1 129:3 <b>beneficiaries</b> 132:7 <b>beneficiary</b> 132:23 134:11 <b>benefit</b> 169:14 170:14 171:19 174:3,9,10 188:11 <b>benefits</b> 89:13,14 107:2 124:3 137:18 165:5 170:18 171:3,16 172:9 173:1 <b>benjamin</b> 147:14 147:16 <b>best</b> 52:20 74:21 82:20 94:5 118:15 128:19 138:24 169:17 170:16,25 174:6,13 182:16 183:7 184:2,12,15 184:24 185:11	202:21 203:9 <b>better</b> 92:2 126:24 128:7,10 215:24 216:15 <b>beverages</b> 179:21 <b>beyond</b> 74:2 82:22 226:24 <b>bibliography</b> 24:13,14,21 <b>bilateral</b> 84:14 85:4 <b>binary</b> 97:15 98:7 <b>biologic</b> 95:21 96:11,16,24 97:8 150:23,23 151:3,4 242:8 <b>biological</b> 5:15 95:16 96:2 97:14 97:19 98:22 144:11 <b>biologically</b> 91:17 93:6,19 94:4 187:3 <b>biology</b> 103:22 <b>birth</b> 151:9 226:6 <b>bit</b> 12:12 20:18 44:23 63:14 78:25 79:2 128:11 129:4 169:22 204:23 215:24 <b>blessing</b> 70:22 71:5 <b>blockade</b> 126:20 126:23 127:13,19 <b>blocked</b> 129:2 <b>blockers</b> 13:9 39:20 106:19 107:3 123:3 126:18 129:1,3 197:24 209:25 210:14	<b>blocking</b> 16:11 43:18 241:8,12,24 241:25 242:5 <b>blog</b> 7:10 194:2,8 195:16 197:4,14 <b>blogs</b> 197:2 <b>blood</b> 173:8 <b>blow</b> 125:14 232:13 <b>blue</b> 45:20 156:20 <b>bmd</b> 166:6,10 <b>bmj</b> 194:5 195:15 <b>board</b> 5:3 <b>bodies</b> 88:5 <b>body</b> 71:11 106:22 216:10,20 <b>bone</b> 166:3 <b>borelli</b> 2:4 9:16,16 <b>boston</b> 44:3 <b>bottom</b> 42:14,20 91:11 97:22 112:14 113:3 114:2 125:8,16 139:25 165:13,20 170:2 178:14,18 188:4,14 211:1 218:15 228:17 230:5 236:12 <b>bound</b> 110:10 <b>bower</b> 126:6 <b>bower's</b> 126:11 <b>bowers</b> 6:7 124:24 129:17 232:3,11 232:19 233:1 <b>box</b> 156:20 <b>boxes</b> 46:14 <b>boy</b> 17:12 81:13 152:21 <b>boys</b> 7:22 151:1 225:8,10 226:6 229:6	<b>bpj</b> 5:3 22:8 50:9 110:14 201:14 <b>brain</b> 90:16 <b>brakes</b> 107:18 <b>brand</b> 83:4 <b>break</b> 11:8,11 18:8 18:24 48:7 50:23 83:8,10,17 106:1 111:5 112:1 150:1 185:15,20 190:10 220:10,16 225:22 229:20 <b>breast</b> 15:1 81:2 81:10 92:19 134:24 135:1,7 <b>breasts</b> 86:9 242:9 <b>breath</b> 122:12 <b>brief</b> 10:13 48:7 220:10 229:25 <b>briefly</b> 18:5 <b>brilliant</b> 202:3 <b>british</b> 192:23 196:23 <b>broach</b> 102:7 <b>broad</b> 14:23 99:16 <b>broader</b> 58:8 <b>broadly</b> 119:20 <b>broke</b> 5:23 105:16 106:7 <b>browser</b> 21:7,12 21:13 65:1 <b>budgetary</b> 59:19 59:21 <b>bullet</b> 180:1 <b>bunch</b> 118:1 <b>bureau</b> 3:10 218:13 <b>business</b> 215:3 <b>button</b> 58:21 125:24
--	--	---	---



[buy - certainty]

Page 9

<b>buy</b> 125:10	<b>cantor's</b> 228:21	206:16 208:5,20	91:6 97:16 110:6
<b>bypassed</b> 167:20	241:3	211:7,13 230:14	199:13 204:16
<b>c</b>	<b>capacities</b> 94:6	231:4,7,20,22	211:5
<b>c</b> 31:22 32:14	<b>capacity</b> 178:9	233:3 236:5	<b>cass</b> 192:4
<b>c.w.</b> 222:18	218:12	<b>career</b> 26:1 38:24	<b>cast</b> 126:17
<b>ca</b> 140:17 245:25	<b>cardiovascular</b>	62:16,25 68:8	<b>catch</b> 20:18
<b>calculation</b> 219:15	173:7 187:1	<b>careful</b> 96:14	<b>categorical</b> 85:18
<b>calculator</b> 219:1,7	<b>care</b> 5:12,24 12:12	169:15 170:15,23	86:1,7,22 91:22
<b>caleb</b> 3:14 9:21	12:22,22,23 13:5,6	172:11 174:4,11	92:4,4 95:1
90:7 242:23	14:5,21,23 49:15	241:19 242:2	134:17,20,22
<b>california</b> 49:4	50:17 51:7 60:21	<b>carefully</b> 118:13	135:9,22
<b>call</b> 13:16 14:11	60:23 61:2,15	141:8 210:19	<b>categorically</b>
17:25 28:9 32:12	68:21 69:23 70:6	<b>carl</b> 2:20 9:14	91:18 92:13 135:4
32:18 45:5 101:18	71:23 73:3,14	20:16 90:6 192:22	<b>categories</b> 103:7
102:1 137:22	74:7 85:7,11,12,19	193:21	<b>categorize</b> 103:2
139:4 146:7	86:14,18 89:16	<b>carrier</b> 133:16	<b>cause</b> 103:22
151:10 192:9	91:18,23,25 92:1	<b>carrington</b> 2:11	186:24
198:3 199:10	94:18 100:12	9:19	<b>caused</b> 134:25
242:7	105:10 106:8,18	<b>case</b> 5:12 9:7	<b>caution</b> 107:1
<b>called</b> 22:17,22	111:14 112:6	13:19 14:3 15:4,6	<b>ccharles</b> 2:25
28:3,10 52:17	116:2,10,19	15:19 19:10 20:4	<b>cdavid</b> 3:21
118:15 147:13,14	117:25 118:3,15	21:22 22:8 24:13	<b>center</b> 3:2 28:2,3,7
151:21 202:17	118:17,21 120:17	24:15 25:4 28:4	28:12,16,24 29:7
<b>calls</b> 13:13 109:25	120:24 121:4	48:10,13,14,16,17	29:11,15 59:3,5,7
138:7,18,18	123:13 124:9	48:17,18,20 49:3,5	59:8 63:24 64:2
<b>calorie</b> 179:20	125:15 126:17	49:10,11,13,14,19	68:4 85:3 145:9
<b>cambridge</b> 45:19	128:20 130:10	49:22,24 50:3,8,9	<b>centers</b> 107:14
<b>camh</b> 226:10	133:10 136:9	50:12 54:19 55:13	132:4 145:1,10,23
227:8	139:3 143:14	55:15 56:7,17	233:9
<b>campos</b> 160:5	145:2,11,15	57:6,7,12,25 58:4	<b>central</b> 127:8,9,11
<b>canada</b> 140:10	146:20,21 147:2	59:12,14 60:2,10	<b>centre</b> 226:9
141:10	147:10,19 148:8	70:11 81:8 85:8	<b>certain</b> 12:15
<b>canadian</b> 6:12	149:15 154:11,25	89:2,15,20,22 90:2	15:15 19:20 79:12
142:22	157:20 158:1,1	107:11,11,13,13	79:14 82:11 91:14
<b>candidate</b> 86:4	159:24 160:8	109:15 132:16,16	95:20 96:22
226:22	162:21 163:23	135:13,13 146:19	127:10,11 128:8
<b>cantor</b> 221:17,24	169:13 170:12	165:7 179:12	136:22,23 146:3
221:24,25 222:2	173:15 174:1	217:14 245:6	173:1
227:19 228:25	176:18 186:20	246:3 247:3	<b>certainly</b> 234:23
241:14	198:5 202:21	<b>cases</b> 29:10 47:16	<b>certainty</b> 79:12
	203:9 206:12,15	47:19,22 56:1,6	82:13 172:13

[certificate - clarity]

Page 10

<b>certificate</b> 244:1 247:11	<b>charles</b> 2:20 4:8 9:14,14 10:7,9 18:4,12,20 19:2 20:21,22 21:2 50:19 51:3 53:9 53:25 54:10,14,16 64:8,12,13,17 65:5 70:12 77:4 83:22 88:21 90:7 105:22 106:4,9 111:1,12 111:22 112:4 113:17 119:12 126:4 134:5 149:22 150:6 156:3 161:18 164:12 167:12 169:5,10 174:19 177:15 178:3 179:7 182:22 183:15 185:16,25 190:6,13,15 194:16,23 196:4,7 196:11,12 201:10 208:8 217:4 218:2 220:9,19 221:18 225:18,25 229:16 231:5 232:10,22 233:4,19 234:22 235:5,19 238:1,21 239:4,16,18 240:2 240:14,25 242:17 242:19,23	203:13 210:2 226:8 <b>childhood</b> 8:1 225:10 226:7 228:1 <b>children</b> 7:9,12,18 22:24 26:11 27:7 27:25 28:23 29:7 29:9 33:3 39:21 50:10 51:11,18 62:13,17 77:25 88:7 101:10 110:1 152:19 170:20 171:5,18 173:5 192:11 193:25 194:18 200:3,6 204:10 221:7,8,20 228:6 240:6,6,10 240:11 241:6,15 241:20,23,25 <b>choices</b> 128:9 <b>choose</b> 215:13,22 <b>chose</b> 162:3 <b>christopher</b> 1:5 9:5 245:6 246:3 247:3 <b>chromosomes</b> 90:14 <b>circle</b> 168:24 169:2 172:19 181:5 236:10,21 237:9,16 <b>circles</b> 168:20,23 168:24,25 169:1,2 169:3 171:25 172:2,19 180:7,11 181:4 182:9,23 183:23 184:5,6 185:9 236:17,19 236:21 237:1,4,5,7 237:9,13 238:19	239:3 <b>circumstances</b> 72:16 132:25 133:5,9 134:13,16 169:16 170:15,24 174:5,12 <b>cisgender</b> 214:23 <b>citation</b> 100:7 110:8 125:12 130:19 140:14 150:17 167:7 188:18 189:8 192:24 193:20,23 215:18 221:15 230:13 <b>citations</b> 24:18 155:16 <b>cite</b> 97:9,10,18 125:12 130:13 152:23 161:1 188:12 228:4 <b>cited</b> 24:23 25:3,9 25:14,17 37:13 129:18 140:8,12 141:3 160:1,16 228:21 232:18 234:18 <b>citing</b> 112:23 130:18 215:20 234:17 <b>citizens</b> 212:14 <b>civil</b> 1:8 246:5 247:5 <b>claims</b> 45:3 <b>clarified</b> 80:20 <b>clarify</b> 24:17 29:1 31:20 33:18 80:17 109:19 132:16 214:19 240:8 <b>clarity</b> 92:9 231:13
<b>certification</b> 246:1 247:1			
<b>certified</b> 191:12 191:13			
<b>certify</b> 244:6			
<b>cetera</b> 15:2			
<b>chain</b> 44:7 45:5,14			
<b>chair</b> 110:15,17 124:17 147:25 199:19			
<b>chairman</b> 51:8 147:25 148:1			
<b>challenges</b> 74:9 127:22			
<b>chance</b> 17:10			
<b>change</b> 59:17,25 60:5 95:20,20 106:21 216:7,20 216:20 245:13,14 247:8 248:3			
<b>changed</b> 45:21 60:8 71:20,20 78:4,24 88:5 96:13 103:6,7 201:23,23			
<b>changes</b> 96:15 148:7 245:12 246:7 247:7,9			
<b>changing</b> 71:11 140:4 157:8 191:21			
<b>chapter</b> 155:10 159:23			
<b>characteristic</b> 96:18,19			
<b>characteristics</b> 44:13,14 90:14			
<b>charged</b> 244:10,11			
	<b>charleston</b> 3:17		
	<b>chart</b> 194:24		
	<b>check</b> 30:25 31:16		
	<b>checking</b> 7:19 195:18 221:21		
	<b>child</b> 29:6 61:9 62:7 64:4 75:14 75:14 79:5,6,7 199:15 200:17,21		

[clark - complain]

Page 11

<b>clark</b> 50:4 <b>classified</b> 80:19 <b>clayton</b> 152:13 <b>clear</b> 11:13 47:12 48:13 91:24 95:24 172:3 176:20 206:3,7 207:2 211:25 214:2 231:12,18 <b>clearly</b> 154:5 <b>cleveland</b> 60:18 245:2 <b>click</b> 21:6,16 198:17 <b>clients</b> 6:6 126:14 <b>clinic</b> 28:4 44:2,3 45:24 46:6 55:11 58:5,15 59:3,13 60:3 61:14 62:13 63:22 145:11 147:1 225:8 <b>clinical</b> 5:16 6:1 6:24 7:3 37:16,21 37:24 38:7,13,16 39:15 45:24 55:13 57:17 60:10,13 80:15 95:7 105:5 109:15,22 112:18 112:25 113:19 114:7 115:16 116:2 117:11 118:16 123:4 132:8 139:7 162:21 163:23 164:16,22 168:1 175:8 177:19 178:15 182:13 192:12,15 216:14 227:4 236:14 241:5	<b>clinically</b> 91:23 <b>clinician</b> 22:18 28:17 68:11 153:15 238:11 <b>clinicians</b> 29:11 38:8,9,18 40:10 56:4 67:3 75:3 76:6 78:14 120:22 123:25 128:8 150:16 173:25 175:21 179:18 <b>clinician's</b> 5:19 <b>clinics</b> 57:13 144:25 145:7,22 146:5,16 147:2 154:12 <b>clitoris</b> 127:7 <b>clock</b> 220:21 <b>close</b> 77:18 <b>closely</b> 102:9 160:3 172:21 <b>clots</b> 173:8 <b>cms</b> 133:2 210:10 <b>cochrane</b> 39:18 40:11 41:9,12,14 41:17,22 <b>cohen</b> 222:20 <b>cohere</b> 106:17 <b>coherence</b> 117:24 <b>collaborative</b> 66:4 <b>colleagues</b> 6:6 126:14 127:24 231:25 <b>collect</b> 37:14,16 38:7,20 <b>collected</b> 215:20 223:13,13,16,20 224:9 <b>collection</b> 37:4,7 109:21 226:23 227:3,9	<b>collective</b> 146:23 147:8 <b>collectively</b> 227:12 <b>college</b> 57:15 205:14,16,20,20 205:21 <b>column</b> 114:4 115:14 165:22 168:2 178:17,21 183:5,6 218:15 <b>combination</b> 24:16,25 <b>come</b> 12:14 53:22 55:15 75:8 79:4 82:15,16 83:5,12 101:19 102:23 109:20 117:22 151:10 185:15 189:19 208:9,11 208:12,16,23 217:22 220:12 232:12 <b>comes</b> 80:24 <b>comfortable</b> 152:21 <b>coming</b> 100:5 171:23 <b>comment</b> 153:23 186:13 <b>commentary</b> 195:22 <b>commented</b> 154:10 <b>comments</b> 19:22 20:12,14 36:14 126:16 127:1,1 128:4,7,14 129:21 198:10 233:2 <b>commercially</b> 182:3	<b>commission</b> 41:20 244:25 246:19 247:25 248:25 <b>commissioned</b> 165:14 166:16 <b>commissioner</b> 218:5,13 <b>commissions</b> 122:14 <b>committed</b> 46:16 <b>committee</b> 40:10 40:12 41:15,18 52:2,5,8,13,23 124:18 141:16,22 143:2 148:1,17 166:16 172:18 193:3 <b>committees</b> 51:20 <b>commonly</b> 12:24 150:15,19 <b>communicate</b> 19:24 <b>communicated</b> 85:14,16 <b>communities</b> 110:5 156:25 <b>community</b> 55:15 91:15 127:25 141:16 <b>companies</b> 73:25 135:16 <b>company</b> 26:4 74:16 138:7,18 210:16 <b>compare</b> 115:8 <b>compared</b> 166:7 166:11 237:19 <b>compelling</b> 235:24 <b>competent</b> 97:16 <b>complain</b> 109:24
---	--	---	--

[complete - continues]

Page 12

<b>complete</b> 11:18 47:21 91:16,16,25 92:1,11,12,18,18 92:20,21 93:5 94:4,23 95:1 <b>completed</b> 11:4 245:15 <b>completely</b> 107:16 107:20,23 122:6 192:1 <b>completing</b> 75:20 <b>complex</b> 92:5 <b>complications</b> 127:22 137:21 157:9 <b>component</b> 44:15 134:24 <b>components</b> 116:21 <b>composite</b> 101:13 <b>con</b> 87:19 <b>conceived</b> 34:12 <b>concept</b> 34:4 103:3 136:22 149:10 203:11 207:7 216:19 <b>concepts</b> 149:10 212:12 <b>concern</b> 14:25 127:8 199:9 <b>concerned</b> 200:2 <b>concerns</b> 40:14 127:4,15,18 138:10 <b>concluded</b> 131:1 243:2 <b>conclusion</b> 188:10 <b>conclusions</b> 40:15 176:12 <b>condition</b> 74:2	<b>conditional</b> 86:16 <b>conditions</b> 107:5 157:5 <b>conduct</b> 31:22 <b>conducted</b> 157:2 <b>conferences</b> 55:14 57:12 66:8 <b>confidence</b> 165:4 169:12 170:12 172:8 174:1 <b>confident</b> 32:22 <b>confine</b> 163:15 <b>confirm</b> 12:4,13 22:25 23:14 47:15 47:16 52:7 54:2 142:18,24 158:20 159:19 165:6 223:7 224:5 226:20 <b>confirming</b> 12:22 23:8 47:10 48:3 58:7 63:15 100:13 159:20 222:17 224:2 <b>conflate</b> 95:15 97:14 98:15 <b>conflating</b> 96:5,17 <b>confused</b> 48:15 171:24 <b>confuses</b> 48:16 <b>conjure</b> 241:2 <b>connecticut</b> 50:4 <b>consensus</b> 175:7 181:13 <b>consent</b> 22:23 30:8 32:2,3,4 33:1,2,23 33:23 39:12 44:16 91:19 93:10 101:9 126:24 127:4 <b>consequences</b> 26:19 137:3,20	174:22 <b>conservatives</b> 129:9 <b>consider</b> 66:10 94:15 128:11,25 129:7 133:8 144:17 <b>considerable</b> 96:22 108:23 231:19 <b>consideration</b> 81:1 134:15 169:16 170:15,24 174:5 174:12 <b>considerations</b> 86:16 130:12 <b>considered</b> 92:6 93:14,15 153:9 215:7 220:4 <b>considering</b> 5:15 87:12 97:7,18 132:24 133:4 134:12 <b>considers</b> 140:5 144:17 <b>consist</b> 51:19 <b>consistency</b> 114:5 114:25 116:7,13 230:8,19 <b>consistent</b> 108:3 108:23 124:22 183:9 231:18 <b>consists</b> 154:6 <b>constantly</b> 15:15 <b>construction</b> 168:12,14 <b>consult</b> 61:11 <b>consultant</b> 72:20 84:19 <b>consultation</b> 66:15 128:25	<b>consulted</b> 200:23 200:24 202:18 <b>consumers</b> 118:3 <b>consumption</b> 179:20 180:2 <b>contact</b> 23:3 226:18 <b>contacted</b> 32:5 200:1 <b>contacts</b> 227:10 <b>contain</b> 119:24 172:1 <b>contains</b> 114:14 117:6 <b>contemplate</b> 86:2 133:2 <b>contemplations</b> 133:10 <b>content</b> 114:16 141:8 195:22,24 <b>contention</b> 130:14 130:21 152:22 159:15 188:12 <b>contentious</b> 197:6 <b>contesting</b> 158:5 <b>context</b> 44:10,11 84:24 99:19 126:17 128:14 129:21 136:24 215:7 228:10,10 <b>continue</b> 83:9 93:10 105:3 129:10 132:15 148:9 149:9 160:25 197:20 205:4 208:1,2 <b>continued</b> 34:10 59:9 <b>continues</b> 112:20 229:12
---	--	--	---

[continuing - critiques]

Page 13

<b>continuing</b> 91:10 226:13	<b>copy</b> 35:20	225:14	169:7,9,11 196:2,5
<b>continuously</b> 64:2	<b>copyright</b> 177:21	<b>correctness</b>	196:9 246:7
<b>contract</b> 244:15	<b>core</b> 99:13	195:20	<b>cover</b> 14:5 74:13
<b>contractors</b> 134:6	<b>corizon</b> 48:11,24	<b>corresponding</b>	86:8 132:21 134:9
135:15	<b>corn</b> 179:23	180:10	214:13
<b>contradicted</b>	<b>corner</b> 53:20	<b>cost</b> 210:2,8,9,14	<b>coverage</b> 5:12
231:8	77:15 98:18,21	210:15,21 211:1,7	49:12 68:20 86:18
<b>contradiction</b>	106:11 113:24	211:13 214:17,19	89:16 99:16
118:14	162:11,13 165:14	214:20 215:15	123:17,19 131:13
<b>contradictions</b>	165:15 167:22	244:10	132:6,12 133:1
231:15	178:2 198:21	<b>costs</b> 95:14 209:25	211:20
<b>contradictory</b>	228:17 230:5	214:9 215:6	<b>covered</b> 14:12,13
120:1,5 231:10	235:12 236:12	<b>counsel</b> 9:12 85:15	74:25 214:22,23
<b>contradicts</b> 97:12	238:7	244:13,13	233:17
<b>contrary</b> 91:12,14	<b>corners</b> 114:2	<b>counseling</b> 140:3	<b>cpg</b> 114:6 115:21
<b>contribute</b> 19:12	<b>correct</b> 12:3 23:4	<b>counselor</b> 75:17	<b>cpg's</b> 114:6,16
<b>contributed</b> 67:15	27:17 28:15 31:7	<b>count</b> 195:8	115:8 116:8,11,14
144:10	39:6 47:12 49:19	<b>countries</b> 100:6	116:21 119:7
<b>contribution</b> 32:7	50:6 55:1,11	105:6 122:1,6,13	230:9,20
<b>contributions</b>	69:16 85:1 93:18	122:17,22,25	<b>create</b> 38:3 197:7
67:12 128:1	93:19,20 98:4	123:7,12,14,20	<b>created</b> 122:14
149:12	99:6 121:19	124:7 166:22	173:25
<b>controlled</b> 172:11	142:10,21 143:19	<b>country</b> 107:15	<b>creating</b> 39:19
<b>controversy</b>	156:1 159:1	149:2	122:2 148:4
242:13	163:24 164:19	<b>county</b> 244:4,24	<b>credential</b> 75:21
<b>convening</b> 199:20	170:1 181:1,10	246:10 247:15	<b>credentials</b> 24:10
<b>conversation</b> 17:5	182:22,23 187:24	<b>couple</b> 120:9	51:5 73:24
93:8 110:20	189:4 192:3,3	126:12 133:22	<b>credibility</b> 129:12
144:16	201:3 210:17	145:3 155:16	<b>criteria</b> 67:11
<b>conversations</b>	215:2,23 218:17	<b>course</b> 24:18	108:1 149:11,12
17:1 19:19 138:16	218:19 224:19	25:25 30:9 37:25	208:24 223:15
<b>conveyed</b> 126:22	236:22	38:14 40:15 57:11	240:12 241:16
127:1	<b>corrected</b> 21:25	62:16,25 71:20	<b>critically</b> 40:23
<b>conviction</b> 201:2	155:7 224:2	90:25 95:6 169:17	115:16
<b>convince</b> 183:17	<b>correctional</b> 84:15	170:16,25 174:6	<b>criticism</b> 16:22
<b>convinced</b> 183:15	<b>corrections</b> 50:5	174:13 203:14	241:2
<b>convincing</b> 173:18	245:12 247:17	229:7	<b>criticize</b> 100:11
<b>copied</b> 189:8	<b>correctly</b> 107:6	<b>courses</b> 57:9	<b>critics</b> 128:17
<b>copies</b> 8:5,5	129:13,14,15	<b>court</b> 1:1 9:6,10	<b>critique</b> 36:11
244:11,11	147:25 155:18	10:2,6,22 12:6	<b>critiques</b> 36:13
	196:1,13,15	13:22 64:11 134:2	



[cropped - demonstrate]

Page 14

<b>cropped</b> 145:1 <b>cross</b> 6:15 16:12 39:21 104:10 106:19 107:3 123:3 149:2,2 152:19 156:6 157:1 168:20,22 168:24 184:5,6 197:25 212:3 214:10 236:17,19 236:20 237:1,4,5,7 237:8,13,15 239:3 241:6,11,11,15 242:6 <b>crosses</b> 169:1,2,4 <b>crouch</b> 1:9 3:8 7:15 9:5 245:6 246:3 247:3 <b>crux</b> 122:25 124:5 <b>cst</b> 1:19 <b>cultivate</b> 139:9 <b>culture</b> 138:18 149:2 <b>curbed</b> 215:17 <b>current</b> 43:20 95:19 96:24 112:17 124:19 137:1 181:25 182:7 <b>currently</b> 54:22 85:12 125:2 127:5 135:5 198:22 <b>curriculum</b> 5:1 <b>cursor</b> 98:6 <b>cv</b> 1:8 9:7 21:18,21 22:1,14 23:1,4,16 23:21,23 24:3 25:18,19,24 37:23 42:4 43:20,20 54:17 101:3	<b>cynical</b> 67:7 152:15 <b>cynthia</b> 3:8 7:16 218:5 <b>cyrus</b> 3:13 9:23,23 <b>d</b> <b>d</b> 113:22 228:1 <b>dahlen</b> 112:24,24 113:6,22 118:12 118:18 120:16 121:3,8 140:12 <b>dallas</b> 2:15 <b>damn</b> 191:17 <b>dandy</b> 17:11 <b>dash</b> 215:3 <b>data</b> 37:4,7,14,17 38:7,11,12,13,21 39:14 44:25 109:20,21 110:10 114:22 122:15 127:5 145:6 153:9 175:9 200:8 215:20 216:23 217:1,5 219:19,21 219:25 220:3 223:12,16,19 224:8 225:7 227:3 <b>databases</b> 115:21 <b>dataset</b> 226:21 229:11 <b>datasets</b> 223:12 239:19 <b>date</b> 1:18 22:4 106:10 225:8 245:8 246:3,9,19 247:3,13,25 248:20,25 <b>dates</b> 222:17 <b>davenport</b> 222:18 229:4,5	<b>david</b> 3:14 4:10 9:21,21 14:18 17:5,6,7 21:11 64:25 71:25 73:12 85:9,23 86:6,21 90:6 91:20 92:15 93:12 94:19,25 119:11 133:11 134:19 163:3 229:24 238:3 <b>day</b> 25:11 95:17 243:2 244:6,18 246:16 247:22 248:22 <b>days</b> 15:12 28:9 66:6 81:5 201:24 202:9,15,16 203:3 203:3 245:18 <b>de</b> 2:6,22 <b>deal</b> 94:10 96:23 101:22 160:20,21 <b>dealing</b> 33:24,25 44:19 147:9 <b>deals</b> 197:6 <b>dealt</b> 28:7 <b>dean</b> 202:1,2 <b>dear</b> 6:6 126:13 231:25 245:10 <b>death</b> 187:1 <b>debalzo</b> 63:17,25 <b>debries</b> 241:4 <b>decades</b> 38:23 151:5 <b>decatur</b> 2:7 <b>december</b> 32:23 52:25 218:17 <b>decide</b> 216:10 <b>decided</b> 115:8 158:2,3 202:4 <b>decision</b> 34:22 95:5 112:18 132:3	132:17 135:23 137:3 233:9,17 <b>decisions</b> 74:17 133:18 195:19 <b>declared</b> 150:25 <b>decrease</b> 16:12,13 <b>deed</b> 246:14 247:20 <b>deemed</b> 124:8 129:3 245:19 <b>deep</b> 122:12 <b>defendants</b> 1:10 3:8 9:22 10:1 13:19,22 14:3 17:2,15 217:13 <b>defense</b> 2:5,13,21 <b>deficiencies</b> 154:1 211:16 <b>deficiency</b> 220:7 <b>define</b> 82:6 <b>definitely</b> 125:8 221:25 <b>definition</b> 41:5 82:5 98:22 154:21 <b>definitively</b> 117:2 120:10 <b>degree</b> 82:13 101:17 142:23 <b>delayed</b> 151:11 <b>deliberately</b> 203:24 <b>delivery</b> 67:17 <b>delr</b> 55:11 56:4 61:14 63:16 64:1 64:3 65:8,24 66:9 67:19,20 <b>demeaned</b> 175:10 <b>demeaning</b> 175:12 175:16 <b>demonstrate</b> 157:14 160:18
--	--	--	--

[demonstrated - difference]

Page 15

<b>demonstrated</b> 152:6 200:5	244:6,10,17 245:8 245:11 246:1,3	<b>destigmatize</b> 99:14	<b>detransitioning</b> 158:15
<b>demonstrating</b> 145:17	247:1,3	<b>detail</b> 39:18 124:21	<b>detroit</b> 43:16 46:24
<b>denied</b> 155:2	<b>depositions</b> 22:7 49:24 143:7 148:6	<b>details</b> 94:2,2 176:25	<b>develop</b> 30:8,20 51:10,24 182:17 183:8 184:16 185:12
<b>denominator</b> 206:24,24 207:2,8	<b>depression</b> 16:13 94:12 101:23 186:25	<b>determination</b> 74:19 94:11 132:6 132:20 133:13 134:8	<b>developed</b> 51:9 142:4 182:20
<b>denote</b> 237:16 238:20	<b>derivatives</b> 180:24	<b>determinations</b> 132:12	<b>developing</b> 32:2 105:8
<b>denoted</b> 230:5 235:12	<b>derive</b> 169:14 170:13 174:2,8,10	<b>determine</b> 73:25 169:17 170:16,25 171:3 174:6,13	<b>development</b> 103:23 137:16 140:8 167:25 178:14 182:12 184:9 236:13 241:9
<b>denotes</b> 168:25 180:4,16,17 236:21 237:9 239:7	<b>derived</b> 120:24 182:3,3	<b>determined</b> 69:10 69:20 70:2 72:18 72:19	<b>developmental</b> 74:9 138:12 144:5 200:7
<b>dense</b> 179:20	<b>describe</b> 137:11 138:5,23 162:1,16	<b>determining</b> 130:11	<b>deviated</b> 106:17
<b>deny</b> 88:11 92:13 93:9 152:18	<b>described</b> 41:4 67:5 71:16 119:6 137:10,14 147:6 166:16 181:20 200:16	<b>detrans</b> 156:25	<b>deviating</b> 105:7
<b>denying</b> 185:5	<b>describes</b> 82:8 108:6 173:22	<b>detransition</b> 6:14 155:10 156:5 157:22,23,23 158:6 159:5,8,22 160:6,13,18,22 162:19,20,25 163:5,19,22 234:24	<b>deviation</b> 125:1
<b>department</b> 3:9 22:9 46:23 47:5 49:11 50:5 59:18 60:22 245:22	<b>describing</b> 147:4 168:21	<b>detransitioned</b> 6:19 159:18,21 160:10,11 161:6 161:22 162:4 233:24	<b>devil</b> 94:1
<b>depends</b> 31:13	<b>description</b> 40:25 41:19 182:11	<b>detransitioners</b> 6:20 156:24 157:3 157:7,12 158:16 158:21,24 161:22 163:1 172:13 233:25 234:6,18	<b>diabetes</b> 173:7 186:24
<b>depicted</b> 236:17	<b>descriptions</b> 183:9		<b>diagnosed</b> 199:15 200:17,21
<b>deposed</b> 10:12 49:7 50:3	<b>deserve</b> 146:11		<b>diagnoses</b> 108:11 240:23
<b>deposition</b> 1:14 5:4,9 7:15 9:4,8 10:19 13:15 15:10 16:3 17:16 22:6,8 47:18 49:13,18 50:8,25 51:23 53:13,14,16 54:7 62:15 63:8 69:3 77:5,9 83:19,24 110:14 111:9 119:13 150:3 153:10 185:22 198:1 201:10 202:13 218:5,11	<b>design</b> 38:3 115:18 162:24		<b>diagnosis</b> 239:25 <b>diagnostic</b> 240:12 <b>diangelo</b> 152:12 <b>dictated</b> 185:7 <b>dictating</b> 133:17 <b>died</b> 205:22 <b>diet</b> 183:22 <b>difference</b> 136:12 139:7 141:21 149:11 160:16
	<b>designed</b> 147:1 162:18 163:18		
	<b>desire</b> 81:1		
	<b>desired</b> 70:14		
	<b>desires</b> 71:21 102:4		
	<b>desist</b> 241:7 242:12,12		
	<b>despite</b> 92:1 150:15 155:10		

166:5 167:4,6 <b>differences</b> 59:18 239:24 240:12,17 <b>different</b> 20:2 33:24 34:4,12 40:18 45:8 49:23 72:10 112:25 116:2 119:14 122:8,9,10,10 134:15 149:3 202:19 203:8 231:9 240:5,15,15 <b>differentiates</b> 170:10 <b>differently</b> 137:7 <b>difficult</b> 82:12 209:1 <b>difficulties</b> 143:20 <b>digits</b> 188:23 <b>dilemma</b> 74:11 <b>diligence</b> 70:10 <b>diminish</b> 34:5 135:7 <b>diminished</b> 214:12 <b>diminishing</b> 134:24 159:17 <b>direct</b> 28:13 235:11 <b>direction</b> 71:20 151:17 <b>directly</b> 29:6 97:12 119:19 200:20 <b>director</b> 58:16 <b>disabled</b> 123:22 <b>disagree</b> 90:19,21 90:23 <b>disagreements</b> 152:14 <b>disappointed</b> 92:25 126:15	<b>discern</b> 231:13 <b>discernment</b> 216:3 <b>disclaim</b> 195:21 <b>disclaimer</b> 194:22 195:10 196:17,25 197:3,5,9,16 <b>disclose</b> 153:8 219:21 220:3,5 <b>disclosed</b> 217:14 <b>disclosure</b> 4:23 <b>disconnected</b> 115:4 <b>discontinue</b> 238:11 <b>discontinuing</b> 162:4 <b>discover</b> 92:20 156:25 <b>discovered</b> 152:17 <b>discrepancy</b> 181:11 182:6 <b>discriminate</b> 146:7 <b>discuss</b> 55:15,17 100:17 137:1 <b>discussed</b> 30:23 44:21 53:16 57:8 100:25 139:15 140:2 180:24 <b>discusses</b> 89:3 197:18,20 <b>discussing</b> 92:10 97:10 141:20,23 160:6 165:1 <b>discussion</b> 32:6 115:6 159:22 241:1 <b>discussions</b> 120:2 <b>diseases</b> 187:2 <b>disgraced</b> 67:9	<b>dismissed</b> 109:2 <b>disorder</b> 7:23 <b>disorders</b> 45:8 <b>disrespectfully</b> 126:19 <b>dissent</b> 125:11 197:8 <b>dissented</b> 232:20 <b>dissenting</b> 233:3 <b>dissertation</b> 222:23 224:6 226:22 <b>dissipated</b> 34:15 <b>distinct</b> 241:5 <b>distinction</b> 54:21 67:2,3 118:17 123:15 183:1 187:14,16 <b>distinguished</b> 66:25 67:13,14 114:15 117:7 <b>distress</b> 241:10 <b>distressed</b> 241:21 <b>district</b> 1:1,2 9:6,6 <b>diverse</b> 7:18 221:20 <b>diversity</b> 61:14 65:15 128:22 <b>divides</b> 240:4 <b>division</b> 1:3 <b>doctor</b> 20:17,23 21:11,24 64:25 72:19,25 74:17 77:12 93:14 101:20 109:14 138:17 172:14 231:23 239:17 240:21,21 242:16 <b>doctor's</b> 175:1 <b>doctoral</b> 222:22	<b>doctors</b> 66:16 92:24 125:14 <b>document</b> 19:6,8 19:14,17 21:4,19 25:19 53:12,18 54:5 64:15 76:25 77:14 79:17 88:23 89:12 108:19 113:23 117:17 124:22 133:15,17 133:19 135:12 145:25 146:1 148:5,24 155:6 164:19 172:2 176:9 177:17,25 178:6 189:11,13 190:16,19,20 191:9 198:20,23 217:18 231:3,9 <b>documented</b> 127:15 150:14 152:12 197:1 234:23 <b>documents</b> 17:22 17:23 25:8 39:20 85:13 175:7 176:14 <b>doe</b> 213:9,9 <b>doing</b> 11:22 38:15 57:19,21 60:25 70:16 93:24 138:3 138:24 144:7 177:7 192:6 193:4 193:5 205:21 <b>dollars</b> 211:5 <b>dominated</b> 151:4 <b>dorm</b> 205:22 <b>double</b> 50:15 80:22 <b>doubt</b> 126:17 127:23
---	---	--	--

<b>doubters</b> 129:9 <b>downgraded</b> 140:2 <b>download</b> 35:12 35:12 <b>downloaded</b> 39:10 <b>dr</b> 1:14 4:4,23 9:4 10:4,10,20 11:17 12:4 13:21 15:4 15:10 16:8 17:18 18:13 19:3 21:3,4 23:11 24:8,12,18 25:2,19 26:17 27:10 29:22 31:15 32:8 33:14 37:15 38:20 41:25 43:22 45:16 47:7 48:6 50:25 51:4 53:1 53:12,19,23 54:6 54:17 56:18 60:17 61:19 63:14 64:14 64:20,22 65:6,7,21 66:23 69:13 71:12 72:6 74:18 75:1 76:22 77:8 78:8 78:19 79:17 80:5 81:24 83:7,19,23 84:10 85:5 86:11 88:15,21,23 89:1 89:21 90:4,13 91:8 93:1 94:14 96:1 97:19 99:1 99:19,21 100:13 100:25 106:4,10 109:2,4,19 110:25 111:9,13 112:5 113:14 114:9 115:12 119:15 121:25 122:24 124:5,24 125:5 126:5,6,10,11	130:2 131:14 135:8 136:1,8 137:5 138:3,25 142:2 143:4 144:6 144:17,19 145:19 147:6 149:20 150:3,7 151:18 152:7 153:6 155:8 156:4,9 158:4 159:7 161:19 162:10,23 163:9 164:1,13,18 167:6 169:8,18 173:20 175:2,12 176:3 177:16,20 179:2 180:9 182:25 184:4 185:14,22 186:1 187:4,15 190:14,16 191:2 193:20 194:11,16 194:20 196:13 197:12,18 200:13 201:7 204:6,8 206:2,21 207:3 209:10 210:2 211:12 212:4,25 217:9 218:3,7,20 220:12,20 221:2 221:19,22,24,24 221:25 222:2 224:14 225:5 226:1,21,22 227:17 228:21 229:25 232:2,10 232:19 233:1 234:22,24 244:6 245:8 246:4,9 247:4,13 248:20 <b>draft</b> 32:25 65:21 105:2 147:23 154:25 157:21	<b>drafting</b> 51:6 220:4 <b>drafts</b> 20:2 <b>dramatically</b> 103:7 122:10 150:21,23 151:5 <b>draw</b> 126:12 <b>drawing</b> 157:20 <b>drinks</b> 179:21,22 183:22 <b>drummond</b> 222:21 <b>dsm</b> 223:15 239:22 240:1,1,4,4 240:4,13,13,24,24 241:16,16 <b>due</b> 70:10 116:8 <b>duly</b> 10:5 244:7 <b>dutch</b> 44:21 108:3 241:4,8,19 242:2 <b>duties</b> 76:12 <b>dysfunction</b> 127:10 <b>dysphoria</b> 6:9,17 8:1 12:25 26:8,12 26:14,24 27:8,20 27:25 28:24 29:15 29:25 30:3,6,10 58:2 62:13 63:1,3 63:6 78:12 80:2 81:1,23 82:1 85:20 88:12 104:2 104:9,15 107:4,10 108:11 131:22 132:8 134:24,25 135:7,7,10 139:12 140:7 147:17 150:14,19,21 151:12,21,22,24 152:16,25 157:5 161:20 162:3	186:8,18 187:9 188:19 191:23 192:11 211:8,25 212:8 213:21 221:6,7,8 225:8 228:1 233:23 236:1 239:25 240:5,23 242:8 <b>dysphoric</b> 6:23 104:6 106:21 164:15
<b>e</b>			
<b>e</b> 1:24 63:13 113:22 244:24 <b>e.g.</b> 179:21 <b>earlier</b> 25:9 38:24 50:7 75:1 76:9 77:8 100:25 121:25 139:15 141:21 191:20 193:3 203:20 242:15 <b>early</b> 22:5 29:16 29:18,20 50:3 66:6 68:14 107:4 122:18 129:7,8 151:6 229:11 <b>earn</b> 120:20 121:6 <b>east</b> 3:16 <b>eastern</b> 9:2 <b>easy</b> 99:15 110:15 110:17 199:19 <b>eat</b> 182:2 <b>eating</b> 179:19 <b>ebm's</b> 194:5 <b>editor</b> 36:16 37:24 192:23 <b>editorial</b> 148:4 <b>editorializing</b> 175:3			

<b>editors</b> 194:6 196:20,21 <b>edmo</b> 48:11,24 <b>educating</b> 44:25 <b>education</b> 2:5,13 2:21 5:4 22:9 45:6 45:10,11 <b>educational</b> 25:20 <b>effect</b> 166:2 <b>effective</b> 211:13 <b>effectively</b> 215:17 <b>effectiveness</b> 44:24 <b>effects</b> 162:5 188:20 <b>efficacy</b> 145:17 <b>eight</b> 148:17 172:7 213:11 242:5 <b>either</b> 24:5 35:22 47:17,24 50:2 89:6 91:3 102:3 125:24 141:2 170:20 171:4,17 180:13 186:19 205:2 208:22 214:11,23 227:10 <b>elect</b> 128:5 <b>elgudin</b> 63:17,25 <b>elie</b> 156:7,7 <b>eligibility</b> 149:11 208:24 <b>else's</b> 57:11 <b>elusive</b> 98:23 <b>email</b> 245:17 <b>embedded</b> 71:2 103:19 136:18 <b>embryologic</b> 103:23 <b>employee</b> 54:23 244:12,13	<b>employees</b> 89:5,14 89:18 <b>employer</b> 73:17 <b>employment</b> 3:2 25:20 54:18 59:6 <b>empty</b> 168:24 236:21 237:9 <b>enables</b> 35:11 <b>enclosed</b> 245:11 <b>encompasses</b> 139:6 <b>encourage</b> 128:11 183:21 <b>encouraging</b> 180:2 <b>endeavor</b> 10:24 13:12 <b>endocrinally</b> 137:4 <b>endocrine</b> 5:17 6:22,24 7:2 69:5 80:3,6 85:12 97:13 105:7 139:17 148:16 164:7,14,15,21 165:10 167:19 170:17,21 171:15 172:6,20,22 173:11 175:22 176:7,23 177:18 179:11 180:23 183:20 186:2,7,17 187:8,11 205:2 216:7 235:8,16 237:20,24 <b>endocrinologic</b> 66:15 <b>endocrinologist</b> 66:11 70:9 72:17 72:20 93:16 <b>endocrinologists</b> 66:7	<b>endogenous</b> 90:14 <b>endorsement</b> 117:23 118:19 <b>enemy</b> 138:2 <b>engage</b> 139:9 <b>england</b> 196:22 <b>english</b> 191:7 <b>enormous</b> 183:25 <b>enrolled</b> 218:16 <b>entered</b> 48:14 226:14 247:9 <b>entire</b> 19:23 117:21 118:25 165:18 232:6 246:5 247:5 <b>entirety</b> 189:8 <b>entitled</b> 43:1 48:11 48:21 106:6 112:24,25 113:19 125:14 152:24 156:5 164:14 165:14 177:17 193:25 195:10 227:25 <b>equal</b> 236:5 <b>era</b> 62:7,8 <b>eradicate</b> 96:15 <b>errata</b> 245:13,18 247:7,10,18 248:1 <b>erroneously</b> 126:19 <b>error</b> 160:9,15,21 164:10 <b>erythematosis</b> 26:19 <b>especially</b> 44:18 147:1 159:25 175:5 186:21 215:8 <b>esq</b> 2:4,11,12,20 3:1,12,13,14	<b>essentially</b> 117:10 <b>establish</b> 153:12 <b>established</b> 59:7 73:21 <b>establishing</b> 128:20 <b>establishment</b> 28:6,7 <b>esteem</b> 186:25 <b>estimate</b> 62:19 63:12,13 75:5 79:16 <b>estimated</b> 62:16 <b>estimating</b> 46:13 <b>estimation</b> 46:9 207:10 <b>et</b> 1:6,9 5:4,9 7:15 9:5,5 15:2 77:6 112:24 118:12,18 120:17 222:21,24 223:1 225:5 245:6 245:6 246:3,3 247:3,3 <b>ethical</b> 72:24 73:7 120:18 121:5 160:19 241:2 242:11 <b>europe</b> 152:11 <b>european</b> 143:21 <b>evaluate</b> 181:2 <b>evaluated</b> 61:8 <b>evaluating</b> 121:17 <b>evaluation</b> 51:18 115:20 143:23 144:18,22 <b>evaluations</b> 140:9 <b>evening</b> 17:4,7 <b>eventually</b> 34:17 60:24 101:24 <b>evidence</b> 30:12 31:1 106:6,22,23
---	--	---	--



**[evidence - expert]**

Page 19

108:15,17 109:6 115:4 121:1 128:20 130:13 132:8 143:8,14,15 143:18 144:23 145:5,20 151:13 152:2 154:23 155:10 161:1 165:3 166:1,2,14 167:25 168:21,23 168:25 173:18 175:25 178:14 181:2,23 182:7,13 182:17,20 183:7 183:11 184:7,8,13 184:15,18,25 185:12 186:4,6,16 186:23 187:6,7 188:8,11 195:1 198:1 235:18 236:9,13,20,22 237:8,10,17 238:24 <b>evidenced</b> 153:21 186:9 <b>evident</b> 187:18 <b>evolution</b> 34:3 124:19 144:9 147:10 <b>evolutionary</b> 19:14,17 <b>evolving</b> 96:25 <b>exact</b> 14:9 22:20 134:4 <b>exactly</b> 12:19 45:14 52:3 204:5 219:2 236:23 <b>examination</b> 4:8 4:10 10:8 229:23 <b>examined</b> 10:5 116:8	<b>example</b> 79:5 101:15 124:4 146:3 196:23 205:25 206:1 <b>exception</b> 144:1,6 144:8,12 148:3 211:12 212:2,10 223:8 <b>exceptions</b> 206:10 207:12 <b>excerpted</b> 128:14 <b>exclude</b> 211:19 <b>excluded</b> 85:12,12 242:3 <b>excludes</b> 86:13,15 86:15 211:19 <b>exclusion</b> 85:6,14 86:1,7,13 87:1,17 92:4 135:9 232:19 <b>exclusions</b> 85:18 85:18 <b>exclusive</b> 78:14 <b>excuse</b> 29:24 30:17 37:3 44:2 57:6 63:19 68:15 99:17 117:15 121:7 156:7 183:6 192:22 206:18 218:4 <b>executed</b> 247:10 <b>execution</b> 246:14 247:19 <b>exhausted</b> 47:25 <b>exhaustive</b> 47:20 47:24 48:2 <b>exhibit</b> 4:23 5:1,3 5:7,9,12,15,19,23 6:1,6,9,12,14,17 6:22 7:1,5,7,9,12 7:15,18,22 8:1 17:18 18:9,15,18	19:4 20:23,25 21:22 42:6 53:2,3 53:10 58:18,19,22 58:25 61:25 62:1 64:6,7,9,18 65:6 66:18,19,23 76:22 76:23,24 77:5 83:24 88:14,16,19 90:5,8 97:3,4,5 99:5 100:19,21,23 100:24 105:12,14 111:16 112:8,10 113:5,7,18 125:4 125:18,20,23,25 126:5 130:2 131:9 131:17 136:3 140:19,20,21 145:8,12 155:20 155:22 161:14,15 164:1,2,13 165:11 169:23 177:9,10 177:11,17 188:1 188:16,25 189:2,5 189:10,17,18,20 189:23 190:2 191:16,18 193:9 193:10,13,14,22 194:10,11,12 196:10 197:19 198:14,15,16 201:17 209:7 217:20,23 220:8 220:22 221:1 224:13,17,17 227:16 230:2 231:24,25 232:17 232:24 233:8,14 233:16,21 235:6 238:4 <b>exhibits</b> 4:21 8:4 111:20	<b>exist</b> 24:24 87:2,17 147:2 153:21 <b>existence</b> 66:9 <b>exists</b> 147:3,5 152:3 157:23 158:6,15 187:10 <b>expectancy</b> 173:19 186:25 <b>expected</b> 172:9 <b>expecting</b> 69:24 <b>expense</b> 124:20 <b>experience</b> 24:9 37:16,21 38:14,17 39:15 47:15 54:18 62:24 104:2 109:22,23 110:6 110:12 122:20 124:18,22 128:6 128:25 147:9 175:17 176:6 192:11 200:16 202:15 204:9 216:14 <b>experienced</b> 162:2 <b>experiences</b> 66:13 70:13 95:6 108:24 108:25,25 109:1 124:21 146:23 175:8 <b>experiencing</b> 107:10 <b>experiment</b> 37:11 44:22,22 <b>expert</b> 4:23 13:18 13:22 15:5,11,20 19:9,21 20:4,6 21:22 47:15,17 48:10,17 49:5 61:24 74:12 87:1 87:12,14,22,23 88:2,2 123:11
--	--	--	--

[expert - first]

Page 20

153:6,7 166:24 186:19 211:6 219:16 236:6 <b>expertise</b> 74:2 87:8 95:8 133:12 211:11 <b>experts</b> 120:21 <b>expiration</b> 246:19 247:25 248:25 <b>expires</b> 244:25 <b>explain</b> 33:21 40:3 59:22 203:6 <b>explained</b> 67:1 72:16 133:2 200:15 <b>explanation</b> 32:11 33:13 59:23 73:2 82:19 139:5 171:20,21 179:9 205:7 <b>explicit</b> 40:22 <b>explicitly</b> 71:3 <b>exposito</b> 160:5 <b>expressed</b> 195:13 <b>expressing</b> 40:14 <b>expression</b> 96:12 158:3 <b>extended</b> 136:25 143:22 <b>extends</b> 87:9 <b>extensive</b> 62:24 <b>extensively</b> 91:3 <b>extent</b> 28:1 156:25 <b>external</b> 90:13 <b>extra</b> 129:5 <b>extracted</b> 114:14 114:24 115:2 117:6 <b>extraction</b> 114:22 <b>extremely</b> 129:8 159:24 206:7	<b>f</b> <b>facial</b> 15:1 <b>fact</b> 7:19 32:14 39:11 68:13 92:21 93:4,7 118:5 122:18 148:13 150:15 152:6 154:12,20 166:23 176:13 183:22 216:18 221:21 <b>factored</b> 214:10 <b>factors</b> 90:15 <b>facts</b> 93:7 95:21 99:21 138:15 220:3 <b>factually</b> 91:23 <b>faculty</b> 43:12 60:10 <b>failed</b> 124:3 <b>failure</b> 118:14 126:20 <b>fain</b> 1:5 7:15 9:5 18:18 245:6 246:3 247:3 <b>faint</b> 105:19 <b>fair</b> 23:25 46:17 62:12,14 63:14 74:20 197:12 211:17 <b>fairly</b> 127:1 <b>fall</b> 34:17 47:4 <b>familiar</b> 61:1 85:5 85:11 120:8 154:17 236:24 <b>families</b> 128:8,11 128:23 204:17 241:21,22 <b>family</b> 202:16,17 206:6 226:8 <b>far</b> 12:10 31:8 46:1,4 48:24	72:17 122:5 123:19 127:8,10 161:8 205:5 223:25 <b>fast</b> 179:22 196:14 <b>fat</b> 179:24 <b>fate</b> 72:25 <b>february</b> 22:5,22 23:1,7,17 30:24 32:24 34:1,9,18,25 35:2,8 194:19 <b>federal</b> 210:4,10 211:18 214:20,21 <b>fee</b> 215:1 <b>feel</b> 73:24 87:8 103:1 146:8 <b>feelings</b> 157:5 <b>feels</b> 86:10 <b>fellow</b> 66:25 <b>felt</b> 81:6 123:25 <b>female</b> 98:23 102:13 157:3 <b>females</b> 150:23 151:4 166:9 212:24 <b>feminine</b> 101:14 101:17,18,18 102:3 127:2,16 <b>feminization</b> 15:1 101:17 <b>feminizing</b> 166:12 <b>femoral</b> 166:6 <b>fertility</b> 127:15 129:6 214:9,12,13 <b>field</b> 15:8 37:15,16 39:13 67:12 87:5 128:1 154:17 <b>fields</b> 38:1 211:11 <b>figure</b> 131:15,16 167:10 168:22 170:22 171:22	<b>file</b> 164:4 189:20 217:21 <b>fill</b> 183:23 <b>filled</b> 168:20,22 171:25 172:2,19 172:19 180:7 182:23 184:5,6 185:9 236:10,17 236:19,21 237:1,4 237:5,7,8,13,15 238:19 239:3 <b>final</b> 36:15 <b>finally</b> 35:1 205:17 <b>financially</b> 244:14 <b>find</b> 74:10 110:4 189:7 205:16 236:25 245:11 <b>fine</b> 23:25 48:9 49:3 52:16,21,21 59:24 83:11 91:9 100:13 137:9 168:15 196:5 221:14 <b>finish</b> 23:12 125:6 <b>finished</b> 11:6 33:13 65:19 234:10 <b>finland</b> 5:23 100:10 105:11,16 106:7 107:1,9 122:1 154:9 188:7 <b>finnish</b> 7:7 106:16 108:2 190:22,24 191:3 209:16 <b>firm</b> 23:4 143:14 143:15 <b>first</b> 10:13 20:4 23:3 33:13 44:9 78:22 81:5 97:23 98:22 106:11,15 106:20,24 109:12
---	--	---	---

[first - further]

Page 21

113:21 117:4 130:8 131:20 132:3 138:4 142:2 143:12 144:14 145:9,17 155:16 156:12,19 157:18 162:1 177:22 178:22 183:5 185:17 188:13,17 188:18 194:24 195:8 213:12 215:6 216:6 217:16 222:8 224:24 225:3 226:5 230:2 234:9 234:11,14,15,16 234:20 235:2,3,4,4 244:7 <b>firsthand</b> 124:18 <b>fish</b> 187:2 <b>fit</b> 41:18 <b>five</b> 27:15,19 28:12 57:13 62:22 78:13,16,17,23 82:22 163:8 195:7 199:13 217:9 <b>flag</b> 161:3 <b>flexible</b> 115:3 <b>flight</b> 45:21 <b>florida</b> 49:10,10 49:14 <b>flow</b> 120:25 <b>focus</b> 188:9 <b>focuses</b> 102:2 <b>focusing</b> 144:16 <b>folder</b> 20:24 198:16 <b>folks</b> 203:4 207:23 <b>follow</b> 7:22 34:21 48:5 70:15 79:8 81:21 114:13	123:2 172:12,17 173:12 175:19 176:23,24 206:14 207:16 208:15,19 208:20 209:1,6 223:10,11,24,25 224:4 225:7 226:12,12,14,16 226:23 227:5,11 228:16 229:6,13 242:18 <b>followed</b> 169:18 225:12 <b>following</b> 106:21 118:6,7 142:3 155:9 158:1 174:3 <b>follows</b> 10:5 99:25 <b>folwell</b> 5:9 51:23 77:7 <b>foods</b> 179:21,22,24 <b>foot</b> 207:13 <b>footnote</b> 125:12,13 140:12 188:12,13 188:13 189:16 192:25 215:18 <b>force</b> 144:11 169:12 170:11 173:25 182:16 183:7,8 184:12,24 185:11 <b>forces</b> 138:12 <b>ford</b> 43:16 46:23 47:9,10 <b>foregoing</b> 246:13 247:18 <b>forget</b> 176:7 <b>forgo</b> 127:17 <b>form</b> 14:18 71:25 72:7 73:12 85:9 85:23 86:6,21 89:6 91:20 92:15	92:19 93:12 94:19 94:25 119:11 133:11 134:19 163:3 <b>formal</b> 35:1 52:12 141:23 <b>former</b> 40:21,25 114:18 202:1,2 <b>forming</b> 138:8 <b>forms</b> 88:11 93:22 138:21 <b>formulating</b> 120:19,20 121:6 <b>forth</b> 19:25 87:10 94:13 101:24 149:5 232:16 <b>forward</b> 128:24 190:3 196:6 205:4 245:15 <b>found</b> 106:22 112:17 140:11 157:7 165:3 188:11 <b>foundation</b> 27:17 28:14 30:18 31:8 <b>founded</b> 58:5,14 <b>four</b> 20:2 33:8,15 33:22 34:5,14,14 34:19,22 35:15 43:11 44:1 79:14 83:12 91:11 160:10 163:8 169:3 171:25 172:2 182:23 183:23 185:8 195:7 199:13 201:2 <b>fracture</b> 166:13 <b>framing</b> 77:25 81:20	<b>framingham</b> 84:15 <b>france</b> 100:10 122:2 <b>free</b> 35:13 246:14 247:20 <b>freely</b> 20:6 <b>french</b> 154:9 <b>frequently</b> 42:21 <b>fresh</b> 205:18 <b>freshman</b> 205:24 <b>friendly</b> 146:5,6 147:1 <b>friends</b> 6:6 126:14 231:25 <b>front</b> 21:5 46:12 58:13,25 67:6 149:7 222:5 233:10,25 240:19 <b>frontiers</b> 223:3 224:7,19 <b>fructose</b> 179:23 <b>fruit</b> 179:22 180:3 182:2,4 183:22 <b>fruits</b> 180:2,24 183:22 <b>frustrations</b> 209:5 <b>full</b> 11:18 54:22,22 57:6 59:6 93:21 <b>fully</b> 140:1 <b>function</b> 51:21 66:17 90:17 127:5 193:18 <b>functioned</b> 68:11 <b>fund</b> 2:5,13,21 <b>fundamental</b> 96:11,18,19 <b>funding</b> 32:13,18 33:8 101:5 <b>further</b> 30:14 95:10 132:16
--	---	---	---

[further - go]

Page 22

242:16 <b>future</b> 51:21 88:6 128:7,17 162:22 163:23	125:2 128:20 129:1 130:12 131:22,22 132:6,8 132:13,21,22 134:9,10,25 135:7 135:10 139:12 140:7,17 144:16 144:25 145:11,14 146:5 147:17 150:14,18,20 151:11,21,22,24 152:16,19,25 157:4 158:3 161:20 162:2 164:14,15 186:8 186:18 187:9 188:8,19,19 191:22 192:11 193:25 194:17 199:23 203:11 204:10 211:8,25 212:3,3,7 213:21 221:6,7,8,20 225:8 225:9 226:8 227:25 232:20 233:3,17,23 236:1 236:1,3 239:25 240:5,23 241:6,11 241:15 242:7	<b>generic</b> 138:22 <b>genital</b> 14:25 90:14 92:19 127:19 129:5 <b>geographic</b> 59:6 60:11,15 <b>geographically</b> 60:21 <b>georgia</b> 2:7,23 <b>gesture</b> 10:25 <b>getting</b> 70:7,25 77:18 111:20 120:13 146:20 174:14 189:22 192:20 198:22 212:11 241:24 <b>gid</b> 195:4 <b>girl</b> 80:25 152:21 <b>girls</b> 150:24 151:8 229:8 242:8,8 <b>give</b> 40:3 43:15,20 45:13 46:18,23 48:15 55:5 57:10 62:2,20,21 63:11 66:21 67:3 71:5 72:2 83:10 88:15 91:19 93:10,10 99:18 100:19 113:9 125:3 147:2 149:20 152:10 155:20 160:13 191:25 199:21 200:9,11 203:13 204:6 208:18,25 209:7 225:16 241:25 <b>given</b> 31:21,21 41:25 43:5 47:9 48:16 71:22 72:1 74:3,3,4 81:2 84:13 107:1	122:14 151:14 176:13 197:23 206:1 212:11 242:5,6 <b>givens</b> 153:16 <b>gives</b> 93:20 <b>giving</b> 11:18 77:9 87:6 109:23,24 122:19 176:21 <b>glance</b> 98:6 <b>global</b> 128:21 <b>globe</b> 129:11,12 <b>go</b> 10:6,11 18:2,4 18:20 21:6,11 23:24 31:11 36:1 48:6 50:19,19 58:22 64:10,25 65:18 66:14 70:10 70:20,22 79:20 81:15 90:4 91:8 93:21 99:3,4,8 104:16 105:20,22 111:2,22 113:8 114:13 115:11 116:12 120:11 121:23 124:12 125:18 127:13 130:1 132:11 136:2,2 139:20,24 149:23 150:7 162:9 165:19 167:18,18 169:23 182:11,12 185:16 188:1 190:3,3,6 191:15,15 194:20 195:6 198:12 199:3 206:13 208:6 209:6,11 214:4,7 216:6 220:7,10 221:10 225:16,18 229:16
<b>g</b>			
<b>g</b> 16:24 63:13 127:7 <b>gain</b> 173:8 <b>gallery</b> 46:11 111:19 <b>gangbusters</b> 122:23 <b>gathered</b> 157:2 <b>gender</b> 6:2,9,9,12 6:17,23,23 7:9,12 7:18,22 8:1 12:22 12:22,25 13:5,14 14:5,11,21,23 26:8 26:12,14,24 27:7 27:20,25 28:4,10 28:24 29:15,25 30:3,6,9,12 31:1 44:10,14 49:15 51:12 58:2,5,14 59:2,2,9,9,13 60:3 61:2,14,15 62:13 63:1,3,5,21 65:14 76:16 78:12 80:2 80:25 81:6,23 82:1 84:6,9 85:6 85:20 88:12 89:16 89:17 90:15,19,23 91:1,5 92:3 95:13 95:15,19 96:5,6,12 96:13,17,19,21,24 96:25 97:16,25 98:1,2,2,5 103:14 104:2,9,15 105:10 106:6,20 107:4,10 108:1,11 113:1,20 115:17 116:3	<b>general</b> 12:20 14:1 33:2 44:9,13 47:4 47:4,5 68:19 102:1 136:11 189:24 195:17 197:14 207:13 <b>generally</b> 24:8 31:21 37:14,19 44:6,7 45:16 57:15 69:15 74:20 80:9 88:10 115:24 136:9 172:16		

230:2,4 231:23 233:8,21 235:6 236:11,16 237:12 238:4,6,13,14,22 239:6 241:20,23 <b>goal</b> 128:19 162:20 <b>god</b> 129:13 191:17 <b>goes</b> 25:11 165:21 <b>going</b> 9:1 12:11 17:21,24 18:6,10 18:22,25 20:23 25:18 31:2 32:13 44:1 51:1 53:1 58:11 64:5 66:18 67:19 76:21 83:7 83:15,20 88:14 92:17 93:17 98:21 99:1,12 100:18 105:12,24 106:2 106:16 110:7 111:4,10,25 112:2 113:6 114:12 122:23 125:6 126:12 128:24 129:2 139:4 143:3 144:20 146:7 149:24 150:4 160:20,25 161:3 162:10,14 163:25 165:18 170:21 172:4 174:8,10 178:21 182:11 185:23 188:17,24 188:24 189:16 190:2,8,11 191:18 194:8,21 195:7 196:5 198:16,19 200:14 203:12 207:24 209:6 211:1 220:8,9,14	220:17,22 221:3 225:21,23 229:14 229:19,21,25 242:11,12,25 <b>good</b> 10:10 62:11 68:24 138:14 196:9 205:7 219:5 219:6 224:21 242:20 <b>goodness</b> 150:20 <b>gotcha</b> 178:7 <b>gotten</b> 199:2 <b>government</b> 74:16 95:2 133:13 210:4 210:10 211:18 214:21 <b>governments</b> 87:10 <b>grade</b> 241:6 <b>graded</b> 180:6 <b>graduate</b> 55:2 57:9,16 <b>grand</b> 47:3 55:6 242:13 <b>grandell</b> 17:8 <b>grant</b> 26:18,23 27:11,13 28:1,5,6 30:7,11,14,17,19 30:21,23 31:19,20 31:20,24,24 32:9 32:11,12 34:22,23 72:2,3 <b>grants</b> 25:25 26:4 26:7,10 27:16,19 28:11,13 29:23,24 30:2,5 32:15 <b>graphical</b> 183:9 <b>gravely</b> 92:25 <b>great</b> 25:18 99:5 101:22 117:23 130:1 188:6	205:15 <b>greater</b> 236:5 <b>greatly</b> 118:11 <b>green</b> 222:19 229:7 <b>grooming</b> 96:14 <b>ground</b> 10:11 <b>group</b> 39:18 41:21 51:8,14 52:9 56:2 56:2 84:19 120:23 120:23 131:13 199:21,24 200:6 200:12 240:9 <b>groups</b> 42:21 <b>growing</b> 100:6 105:6 151:7 154:13 155:11 157:15 158:10,24 159:11,16 163:2 234:5,17 <b>growth</b> 129:2,5 <b>guarantee</b> 213:14 <b>guess</b> 82:4 94:20 134:20 167:2 210:7 213:20 <b>guesstimate</b> 52:25 63:12 <b>guest</b> 24:1 <b>guidance</b> 128:23 <b>guide</b> 146:4 149:4 <b>guideline</b> 6:25 7:3 130:11 164:16,22 175:25 177:19 179:10 186:9,10 <b>guidelines</b> 6:1 51:11,15,20,24 52:4 100:4 105:3 105:7,8 106:18 107:1 108:3 112:17 113:1,19 114:8 115:17,19	116:2 117:12 118:4,16,16,17 120:21 121:7,17 122:3 136:10 140:10 149:1 164:8 165:1,2,11 167:8,19 168:1 170:6,7,9,22 171:1 171:9 172:17 173:21 174:1 175:4,14,16 177:5 177:23 178:15 179:4 182:13,19 186:2,7,17 187:9 187:10,16,18 191:21 235:8,17 236:14 237:19,20 <b>guillory</b> 2:12 <b>guys</b> 134:3
			<b>h</b>
			<b>h</b> 113:22 <b>habits</b> 179:19 <b>half</b> 158:9 205:9 236:4 <b>halfway</b> 77:20 <b>hand</b> 53:20 77:14 77:21 98:18,21 113:24 114:4 115:14 116:13 162:11,13 165:22 167:22 168:2 178:2,17 183:4 198:21 213:25 228:17,22 230:5 235:12 236:12 238:7,25 244:18 <b>handbook</b> 37:24 <b>handled</b> 35:14 <b>hang</b> 64:8 120:19 136:1 162:8 173:20 182:25



[hang - hourly]

Page 24

<p>198:12 207:3  <b>happen</b> 47:2 72:23  81:8 93:17  <b>happened</b> 13:25  47:1,10 51:25  146:20 150:24  173:9 200:12  227:11  <b>happening</b> 72:11  145:7,21 146:15  150:17 154:19,20  168:12 198:5  242:1,4  <b>happens</b> 72:18  122:21 134:16  160:22 190:3,4  <b>happiness</b> 93:24  94:12  <b>happy</b> 59:22 65:12  72:9 137:22  <b>hard</b> 110:4 142:13  176:13 193:17  211:11  <b>harm</b> 169:15  170:14,20 171:4  171:17,20 172:4  174:3,9,10  <b>harry</b> 147:14,16  <b>harvard</b> 43:12  44:2,18,19 46:2  <b>haters</b> 129:10  <b>hayes</b> 16:5  <b>head</b> 10:25 46:19  46:19  <b>heading</b> 114:5  165:13 194:22  226:3 230:8  <b>headline</b> 105:19  <b>health</b> 3:9 5:12  26:18 27:16 28:2  28:3,12,14,17,25</p>	<p>31:5 43:2,12 44:3  44:25 45:7 46:6  47:6 49:12 52:10  59:4,5,8,8 63:24  64:3 68:20 86:17  87:23,25 88:1,3,4  88:6 89:14 93:24  99:24 106:16  107:5 116:10  123:11,14 130:8  166:3 188:7,20,21  192:10 226:9  236:7  <b>healthcare</b> 56:5  69:1 73:4 89:13  115:17 123:17,18  123:19 124:7  195:19  <b>healthy</b> 179:19  187:3  <b>hear</b> 168:14,14  206:13 208:7  209:12  <b>heard</b> 36:25  104:16 109:6  152:15 202:9  204:15 206:3  <b>hearing</b> 168:11  <b>hecox</b> 48:21  <b>hedging</b> 118:10  <b>held</b> 9:8  <b>help</b> 42:7 84:12  95:18 96:13  111:19 128:7  138:10 147:15  174:24,25 177:4  <b>helped</b> 28:1 51:10  147:22  <b>helpful</b> 58:12,21  69:7 80:18,19  169:23</p>	<p><b>helping</b> 149:15  <b>heneghan</b> 192:23  <b>heneghan's</b> 193:21  <b>henry</b> 43:16 46:23  47:9,10  <b>heroin</b> 205:22,23  <b>hesitant</b> 137:6  <b>hesitating</b> 25:10  38:10 70:12 72:22  <b>hhs</b> 210:10  <b>high</b> 169:4 179:23  179:23,24 186:15  200:5,6 221:5  <b>higher</b> 184:17  <b>highlighted</b>  114:19 116:18  164:9 235:5  <b>hildahl</b> 3:23 9:9  <b>hip</b> 166:6  <b>hired</b> 87:4  <b>historic</b> 151:2  <b>historical</b> 229:10  <b>histories</b> 151:14  <b>history</b> 25:21 45:2  127:12 158:17  161:7  <b>hit</b> 58:21 125:24  125:25  <b>hmm</b> 11:1 105:17  148:12 189:1  194:7,14 199:7  216:25 225:4  <b>hold</b> 18:3 134:2  <b>holds</b> 142:22  <b>home</b> 34:10  <b>homoerotic</b> 102:4  <b>homophobic</b> 157:6  <b>hope</b> 127:24 128:7  128:13  <b>hopefully</b> 192:17  216:3</p>	<p><b>hoping</b> 51:19  <b>hormonal</b> 13:8  125:1 165:3  170:19 171:4,16  214:11  <b>hormone</b> 7:9,12  13:7 14:10,11,24  15:2 89:17 92:13  157:8 166:8,12  173:6 193:25  194:17 235:25  236:3  <b>hormones</b> 16:11  16:12 39:21 90:15  91:25 96:14  106:20 107:4  109:12 122:19  123:4 147:3  172:14,15,21  173:5 175:22  176:21 197:25  202:6 203:13,23  205:7,12 206:1  235:18 241:9,12  241:24,25 242:6,7  <b>horrified</b> 199:15  199:16  <b>hospital</b> 43:16  46:23 47:5 60:18  60:22,24 61:16  142:22  <b>hospital's</b> 61:2  <b>hospitals</b> 68:10,12  <b>hour</b> 17:6 43:11  44:1 83:8 108:12  144:15 145:2  197:24 199:15  200:18,20,22  202:6 203:13  <b>hourly</b> 76:4</p>
--	---	---	--

[hours - increase]

Page 25

<b>hours</b> 75:20 120:9 200:19 202:11 <b>human</b> 3:9 44:11 71:10 96:18,19 101:13 103:5,7 130:9 178:9 199:23 <b>hundred</b> 234:25 <b>hundreds</b> 211:4 <b>huntington</b> 1:3 <b>husbands</b> 149:5 <b>hutchinson</b> 152:24 153:18,24 <b>hypothesis</b> 152:3,5 154:18,19 <b>hypothetical</b> 71:22 72:2,3,3	<b>identifications</b> 101:14 102:3 <b>identified</b> 22:24 23:5 81:13 101:10 101:12 102:8,10 104:8,14 134:23 151:17 152:19 166:3 212:3 215:12 241:6,15 <b>identifies</b> 103:19 104:5 228:7 <b>identify</b> 5:20 9:12 23:21 102:17 114:22 115:15 162:20 163:22 208:1 <b>identifying</b> 102:22 103:10 207:12 215:21 <b>identities</b> 99:15 101:17 102:2 <b>identity</b> 7:23 28:4 28:10 44:9,10,11 44:11,13,14,15 51:12 58:3,5,14 59:2,9,10,13 60:3 63:22 76:16 90:16 90:19,23 91:1 92:3 95:20 96:22 96:24,25 97:16,25 98:1,3,5 103:14 128:21 137:18 142:9,18 144:2,9 144:17 199:23,23 204:10 213:11 215:25 225:9 226:8 <b>idiosyncratic</b> 109:3 <b>iii</b> 241:16	<b>imagine</b> 11:25 <b>immediate</b> 203:22 <b>immediately</b> 146:10 <b>impact</b> 127:19 173:16 <b>impartiality</b> 244:16 <b>implement</b> 38:3 <b>implications</b> 88:6 93:23 95:17 96:16 <b>implies</b> 103:9 <b>implores</b> 97:14 <b>implying</b> 143:17 194:25 <b>impolite</b> 33:21 <b>important</b> 22:15 44:12 128:21 140:6 157:4 172:24 <b>impossible</b> 45:21 114:21 <b>imprecise</b> 82:19 <b>impression</b> 177:3 201:4 <b>impressive</b> 141:9 <b>imprimatur</b> 60:4 <b>inability</b> 115:7 <b>inadequate</b> 154:4 154:21 <b>inception</b> 99:14 <b>incidence</b> 120:13 151:7 154:14,25 200:6 <b>incidents</b> 150:20 154:11 159:5 195:2,3 <b>include</b> 86:7 90:15 105:10 153:7 224:8	<b>included</b> 23:16,18 42:25 58:4,4,9 127:4 221:23 242:3 245:13 <b>includes</b> 14:24 49:24 68:6,7 <b>including</b> 28:8 37:18 38:1 68:13 74:18 89:16 127:6 127:21 <b>inclusion</b> 92:4 <b>inclusions</b> 115:9 <b>incoherence</b> 112:19 115:6 117:15 118:14 119:3,17,20,25 <b>incoherent</b> 117:17 118:25 230:15 231:4,18 <b>income</b> 120:20,24 121:6 <b>incoming</b> 124:23 205:18 <b>incomplete</b> 23:2 118:10 <b>inconclusive</b> 106:23 132:9 <b>incongruence</b> 236:2 <b>incongruent</b> 6:23 96:20 164:15 <b>inconsistent</b> 120:25 135:22 <b>incorporated</b> 247:12 <b>incorrect</b> 23:1 36:3 <b>increase</b> 151:19 166:10 172:8 195:1 212:10 215:14 217:9
<b>i</b>			
<b>idaho</b> 48:11,20 <b>idea</b> 33:22 34:5,13 34:19 68:23 93:13 93:15,21 94:16 108:10 117:22 143:2 160:11 208:16 216:11 <b>ideally</b> 212:12 <b>ideas</b> 103:20 <b>identical</b> 114:18 179:3 <b>identification</b> 18:9 20:25 53:3 64:7 76:23 88:16 97:5 100:21 105:14 113:7 125:20 131:9 140:19 155:22 161:14 164:2 177:11 189:5,18 193:10 194:10 215:8 217:20 221:1 224:13 227:16			

[increased - intimate]

Page 26

<b>increased</b> 120:13 127:23 150:21,22 151:23 217:7 241:10 <b>increasing</b> 212:2 <b>increasingly</b> 100:5 <b>independent</b> 30:2 59:14 60:1 66:17 193:6 231:12 <b>independently</b> 114:22 <b>index</b> 4:1 <b>indicate</b> 48:3 168:20,23 184:6 236:20 237:4,7 <b>indicated</b> 87:7 212:7 <b>indicating</b> 221:5 245:13 <b>indication</b> 135:6 151:15 154:14 231:19 <b>indications</b> 151:16 <b>indigent</b> 123:12,15 123:17,18,22 <b>indirectly</b> 29:6 <b>individual</b> 56:13 76:10 95:17 132:23 133:4,9 134:11,16 135:2,3 135:20 193:5 212:22 213:1,2,5 218:12 <b>individual's</b> 132:24 133:4 134:12 <b>individualized</b> 213:22 <b>individually</b> 1:5 29:12 78:13	<b>individuals</b> 5:20 6:17 51:16 91:16 95:12 115:5 129:2 161:20 162:2,14 162:17 166:3 212:13 215:12,22 217:2,6,7,8 219:18 232:19 233:22 <b>industry</b> 87:9 95:3 <b>influence</b> 51:20 <b>influential</b> 100:4 <b>inform</b> 46:5 162:21 163:23 <b>informal</b> 52:14,16 <b>information</b> 38:1 45:13 74:19 85:14 109:15 121:12 149:4 166:13 195:16,17 197:13 197:14 210:18 219:25 239:1 <b>informed</b> 22:23 30:8 32:2,3,4 33:1 33:1,23,23 39:12 44:16 91:19 101:9 126:24 128:9 195:24 227:4 <b>infrequent</b> 62:10 62:11 <b>inherently</b> 37:10 <b>initial</b> 92:22 227:10 <b>initially</b> 32:10 <b>initiate</b> 235:25 <b>initiated</b> 166:22 227:10 <b>initiating</b> 166:8 <b>initiation</b> 166:12 <b>inquiring</b> 203:7 <b>inseparable</b> 216:19	<b>insights</b> 194:5 <b>inspire</b> 128:10 <b>instance</b> 96:10 <b>institute</b> 26:18 31:5 <b>institution</b> 84:15 <b>instruction</b> 72:13 224:25 <b>insufficient</b> 129:2 <b>insurance</b> 49:12 67:21 68:1,9,13,20 73:17,25 74:13,16 74:25 87:9,22 89:15 95:3 99:16 123:11,14 133:13 133:16 135:15,16 138:7,18 210:16 <b>insured</b> 210:5 <b>insuring</b> 74:1 <b>integrates</b> 37:25 175:6 <b>integrating</b> 37:20 <b>integration</b> 39:14 <b>intelligence</b> 200:5 <b>intend</b> 129:22 <b>intended</b> 115:2 <b>intent</b> 126:16 129:22 <b>intention</b> 44:15 <b>interactions</b> 34:2 145:21 <b>interest</b> 244:15 <b>interested</b> 32:1 59:23 126:24 176:17 244:14 <b>interesting</b> 197:4 <b>interests</b> 101:19 102:4,5 <b>internal</b> 216:2 <b>internalized</b> 157:6	<b>internally</b> 102:11 <b>international</b> 6:1 51:14 112:25 113:19 115:22 147:17 212:2 <b>internet</b> 89:6 141:2 <b>interpret</b> 174:17 <b>interpretation</b> 175:10 <b>interpretations</b> 118:20 <b>interpreted</b> 118:3 <b>interpreting</b> 176:2 <b>interrogation</b> 242:15 <b>interrupt</b> 111:17 <b>interrupted</b> 33:12 75:24 <b>interrupting</b> 20:17 33:20 <b>intervening</b> 92:5 <b>intervention</b> 85:22 86:4 88:11 136:16 139:11 144:22 <b>interventions</b> 12:24 13:6,8,9 14:15 69:13 92:14 93:9 94:24 107:2 107:9 108:13 122:7 123:1,8,23 139:17,18 157:10 170:19 171:4,17 188:9 191:22 192:1,12 205:3,5 211:4 214:11 215:13,15,22 217:2,6 228:9 <b>interviewed</b> 89:24 <b>intimate</b> 216:9
---	---	--	---

[intro - know]

Page 27

<p><b>intro</b> 225:2</p> <p><b>introduce</b> 17:22 20:23 53:2 64:5 76:22 88:14 100:19 105:12 113:5,6 125:5 131:8 155:20 164:1 188:16 189:17 194:8 209:7 220:8</p> <p><b>introduced</b> 125:23 131:17 232:17</p> <p><b>introducing</b> 97:2</p> <p><b>introduction</b> 148:25 156:15,16 209:10 234:9</p> <p><b>intuitive</b> 181:14</p> <p><b>investigate</b> 86:2 144:14</p> <p><b>investigating</b> 118:13</p> <p><b>investigation</b> 86:17 144:16 145:13</p> <p><b>investigative</b> 142:1,3</p> <p><b>investigator</b> 26:20</p> <p><b>invited</b> 22:12 42:15 43:15 46:18 199:21 200:9,11</p> <p><b>involve</b> 27:13 37:4 37:7</p> <p><b>involved</b> 16:15 19:24 29:8 39:8 39:14 41:22 47:19 48:6 51:6 87:6 146:17 147:13,18 149:14 199:13</p> <p><b>involves</b> 30:9</p> <p><b>ireland</b> 39:19</p>	<p><b>irrelevant</b> 160:24</p> <p><b>issue</b> 40:24 66:22 85:8 88:1 162:18 174:21 209:9</p> <p><b>issued</b> 99:22 126:6</p> <p><b>issues</b> 19:20 43:13 43:16 51:12 76:16</p> <p><b>issuing</b> 106:18 132:5</p> <p><b>item</b> 21:8</p> <p><b>iv</b> 240:1,4,4,13,24 241:16</p> <p><b>j</b></p> <p><b>j</b> 222:14</p> <p><b>james</b> 221:16</p> <p><b>jane</b> 213:8</p> <p><b>january</b> 24:2 30:24 32:20,23 43:11 44:3 177:22 228:3</p> <p><b>jazz</b> 126:18</p> <p><b>jennings</b> 126:19</p> <p><b>jersey</b> 202:18</p> <p><b>jet</b> 45:20</p> <p><b>jiska</b> 228:1</p> <p><b>job</b> 1:25</p> <p><b>john</b> 213:9</p> <p><b>join</b> 41:14</p> <p><b>joke</b> 178:4,10</p> <p><b>jones</b> 49:14</p> <p><b>journal</b> 22:21 35:4 35:4,6,17 36:2,9 36:10,22,24 37:1,3 109:16 141:5 192:23 196:22,23</p> <p><b>journalist</b> 141:7 142:1,7</p> <p><b>journals</b> 196:21</p> <p><b>judgment</b> 184:2,3</p> <p><b>juices</b> 180:3 182:4</p>	<p><b>july</b> 106:12</p> <p><b>june</b> 43:14,16 46:24</p> <p><b>k</b></p> <p><b>kadel</b> 5:9 51:23 77:6 83:25</p> <p><b>karasic</b> 90:13 91:8 99:19,21 211:12</p> <p><b>karasic's</b> 176:3</p> <p><b>kbandy</b> 3:19</p> <p><b>keep</b> 10:13 79:15 125:9 178:9</p> <p><b>keeping</b> 178:8 211:11 216:10 242:10</p> <p><b>kelley</b> 1:24 9:10 10:7 18:4,20 50:20 64:9 105:22 111:1 134:6 149:22 169:5,10 185:16 196:4,7 217:4 220:10 244:24</p> <p><b>kenneth</b> 152:9</p> <p><b>keohane</b> 49:14</p> <p><b>kept</b> 187:21 210:19,19</p> <p><b>kettenis</b> 222:20</p> <p><b>kettle</b> 187:2</p> <p><b>key</b> 114:14,20 115:22 116:19,22 117:6,11,18 119:4 119:6,17 120:1,2</p> <p><b>kids</b> 16:13 79:13 129:7 146:19 151:14 152:17,20 241:17 242:4,6</p> <p><b>kim</b> 17:8,10</p> <p><b>kimberly</b> 3:12 9:25</p>	<p><b>kind</b> 26:11 68:12 75:21 79:11,12,15 79:24 80:2 135:13 136:15 139:10 141:25 146:20 172:9 178:10 193:2 198:4 210:18</p> <p><b>kinds</b> 37:25 49:23 67:21 145:21 158:22 213:6</p> <p><b>kinky</b> 102:4</p> <p><b>klair</b> 49:10 69:3</p> <p><b>know</b> 10:12 11:8 11:14 12:19,23 18:16 19:22 20:2 20:7,13 22:4 23:23,23 25:1,3 30:13 31:3,12,12 31:14 32:15,23 36:11,25 43:19 46:4 48:5,13 52:13 53:13 54:7 61:3,21 64:20 65:12 66:14 67:14 72:1,20 73:8 81:16 82:14,22 84:16 92:11 94:20 95:5,7 97:6 98:16 100:22 101:25 103:11 116:23 122:5 123:19 124:1,8 125:21 126:2 127:6 131:11 133:15 134:20 135:11 136:19 137:19,23 138:14,22 140:21 142:8,11,13,25 143:1 144:5,20,21 144:22,24 145:8</p>
--	--	--	--

146:12,14,15 148:20 149:6 155:24 156:13 163:4,4 164:17 167:2,15 172:1,13 173:4,9,17 175:5 176:5,15,24 182:3 182:10,18 186:19 191:11,13 193:11 197:2,3,7,10,24 198:3 199:22 201:1 203:17,22 204:4 205:1,5 206:8,12,24 207:16,23,23 208:1,19 210:2,8,8 210:23 211:15,18 211:21 212:11,15 212:17,18,23,24 213:1,3,5,11,16,17 213:22 214:18 215:1 216:14,15 216:17 217:10 218:24,24 219:24 219:24 220:23 221:23,24,25 223:5 230:20,23 234:10,12 237:23 238:15 <b>knowing</b> 211:14 <b>knowingly</b> 27:13 <b>knowledge</b> 29:22 74:3,4,5 123:8,9 211:16 <b>known</b> 95:3,4 137:19,19 186:21 186:24 197:7 <b>knows</b> 137:2 154:18 175:8 <b>kosky</b> 222:20	<b>kraig</b> 3:23 9:9 20:17,21 50:20 54:10 111:1,22 149:22 185:16 190:6 220:10 225:18 229:16 242:23 <b>I</b> <b>I</b> 2:4 16:24 113:22 <b>label</b> 102:24 138:1 225:1 <b>labeled</b> 64:18 <b>lack</b> 116:11 154:22 182:7 206:14 209:5 <b>lacking</b> 182:2 <b>lambda</b> 2:5,13,21 9:15,16,19 <b>lambdalegal.org</b> 2:9,17,18,25 <b>lancet</b> 196:23 <b>language</b> 14:23 20:13 44:23 103:15,16 119:7 148:11,13,22,23 178:25 179:3,9 183:9 191:5 238:22 240:15,16 <b>large</b> 38:3,4 67:10 127:25 130:24 189:20 204:24 217:21 <b>largely</b> 107:3 <b>larger</b> 164:4 <b>largest</b> 225:7 <b>lastly</b> 222:23 <b>late</b> 34:17,18 35:8 50:3 221:8 224:1 229:11 <b>latest</b> 224:2 229:12	<b>law</b> 3:2 12:7 23:4 50:9 87:21 202:4 219:6 220:7 <b>lawn</b> 2:14 <b>laws</b> 149:2 <b>lawsuits</b> 146:18 <b>lawyer</b> 17:7 136:20,22 219:20 <b>lawyers</b> 87:4 <b>lcyrus</b> 3:20 <b>lead</b> 55:13 <b>leader</b> 56:2 <b>leaders</b> 115:22 <b>leadership</b> 57:12 <b>leading</b> 173:6 <b>leaning</b> 151:17 <b>leap</b> 91:23 <b>learn</b> 45:8 <b>learned</b> 128:6 190:23 <b>leave</b> 53:23 77:12 99:3,4 <b>leaving</b> 135:12 <b>lebovitz</b> 222:9 <b>lecture</b> 41:25 43:6 57:10 <b>lectured</b> 42:21 <b>lecturer</b> 42:15 <b>lectures</b> 42:25 43:6,10,15,17,18 46:23 47:1,9,10 55:7 <b>led</b> 34:3 <b>left</b> 59:6 60:20,23 77:21 106:11 111:13 114:1,4 115:14 116:13 162:13 165:13,15 167:22 178:2,17 205:19 228:22 230:5 238:7	<b>legal</b> 2:5,13,21 9:9 9:15,17,19 87:6 110:24 153:15 197:1 245:1 248:1 <b>legalistic</b> 197:10 <b>legislatives</b> 87:10 <b>legitimacy</b> 118:19 128:18 <b>length</b> 136:14 141:8 <b>leon</b> 2:6,22 <b>letter</b> 60:7 69:4 70:7,14,17 71:18 72:16 80:15,21 81:10 84:6,8,11,19 84:23 85:4 148:16 205:1,6,11,13 206:19 208:10,17 208:18,25 245:19 <b>letters</b> 70:4 84:14 84:18 139:16 <b>level</b> 41:23 74:15 74:16,16 95:2 119:12 139:3 172:13 238:17 <b>levine</b> 1:14 4:4,24 5:5,10 9:4 10:4,10 10:20 11:17 12:5 13:21 15:4,10 16:8 17:18 18:13 18:18 19:3 21:3,4 23:11 24:8,12,18 25:2,19 26:17 27:10 29:22 31:15 32:8 33:14 37:15 38:20 41:25 43:22 45:16 47:7 48:6 50:25 51:4 53:1 53:12,19,23 54:6 54:17 56:18 60:18 61:19 63:15,17
--	--	---	--



[levine - look]

Page 29

64:14,20,22 65:6,7 65:21 66:23 69:13 71:12 72:6 74:18 75:1 76:22 77:5,8 78:8,19 79:17 80:5 81:24 83:7 83:19,23 84:10 85:5 86:11 88:15 88:21,23 89:1,21 90:4 93:1 94:14 96:1 97:20 99:1 100:13,25 106:5 106:10 109:4,19 110:6,25 111:9,13 112:5 113:14 114:9 115:12 119:15 121:25 122:24 124:5 125:5 126:5,10 130:2 131:14 135:8 136:1,8 137:5 138:4,25 139:8 140:8 142:3 143:4 144:7,17,20 145:19 147:6 149:20 150:3,7 151:18 152:7 153:6 155:8 156:4 156:10 158:4 159:7 161:19 162:10,23 163:9 164:1,13,18 167:6 169:8,18 173:20 175:2,13 177:16 177:20 179:3 180:9 182:25 184:4 185:14,22 186:1 187:4,15 190:14,16 191:2 194:11,16,20 196:13 197:12,18	200:13 201:7 204:6,8 206:2,21 207:3 209:11 210:2 212:4,25 217:10 218:3,7,20 220:12,20 221:2 221:19,22 224:15 226:1 227:17 229:25 244:6 245:8 246:4,9 247:4,13 248:20 <b>levine's</b> 109:3 <b>lewis</b> 46:19 <b>lgbtq</b> 61:2 <b>liability</b> 195:21 <b>library</b> 35:18,18 <b>licensed</b> 75:16 76:6 <b>lies</b> 95:8 <b>life</b> 38:15 66:25 95:6,18 127:14 140:4 173:17,18 176:15 186:25 207:19 208:2 <b>lifelong</b> 173:6 208:20 <b>limit</b> 105:5 <b>limitation</b> 143:7 172:23 <b>limitations</b> 16:16 44:22 59:19 95:13 130:25 173:12 <b>limited</b> 127:2 186:7,16 187:8,17 213:18 <b>line</b> 77:19,21 78:8 78:15 79:23 81:16 81:18 84:4 106:20 125:10 140:15 143:12 199:5 200:14 215:3	218:9,14 245:13 247:7 248:3 <b>lines</b> 91:11 <b>link</b> 189:8 <b>lipid</b> 173:7 <b>lisa</b> 142:11 161:22 162:24 233:22 <b>lisamacrichards</b> 142:4 <b>list</b> 24:9,23 25:24 26:16 27:15 41:25 43:6 47:14,20,21 47:24,25 53:4 100:6 198:15 210:1 222:7 <b>listed</b> 21:9 26:3 47:7,18 100:14 130:24 138:22 222:8 235:2 247:7 247:17 <b>listen</b> 56:6 <b>listeners</b> 55:19 <b>listening</b> 138:9 <b>listing</b> 228:16 247:7 <b>literally</b> 138:4 <b>literature</b> 31:23 37:10,22 39:4,5 40:9,16,17,22 74:4 193:5 240:22 <b>little</b> 20:18 33:24 40:17 44:23 46:14 63:14 78:25 79:2 79:3 87:24 114:16 114:25 137:6 148:3 169:21 200:4 204:23 215:23 237:17 <b>littman</b> 155:18 160:2 161:12,23 162:24 233:22	234:18,22,24 <b>live</b> 81:4,5 103:11 <b>lived</b> 158:1 202:18 <b>lives</b> 75:15 94:11 137:21 157:25 <b>load</b> 53:5 177:9 <b>loading</b> 64:21,22 189:20 <b>local</b> 75:16 132:15 133:20 <b>locate</b> 228:10 <b>located</b> 53:19 <b>location</b> 59:14 60:12 <b>long</b> 57:11 67:4 70:21 73:23 88:4 93:24 102:6 124:3 127:5 128:1 137:20 143:8 173:3 174:21 176:9 196:21 198:23 203:10 217:21 223:11 <b>longer</b> 52:2,6 55:24 60:2,15,16 140:4 148:24 238:14 <b>look</b> 22:7 37:23 65:14 116:6,24 122:14 141:7 145:8,12 152:9,10 154:3,7 158:16 162:9 167:25 169:22 171:11,11 172:21 177:5 179:15 182:11 192:17 193:6 194:22 197:20 198:12,15 204:6 220:22 222:6 224:11 227:14
--	---	--	--

228:11 238:2,9,25 <b>looked</b> 177:24 179:4 189:13 190:17 228:4 <b>looking</b> 18:13 42:5 42:25 58:18,24 83:23 91:9 99:9 106:15 117:10 119:5,6 121:2 125:22 126:13 131:20 139:23 145:25 149:19 161:25 165:10 178:22 179:18 187:25 188:3,5 195:9 201:12,16 201:16 202:13 209:22 215:4 216:22 218:9 222:7 224:24 226:3 229:10 234:13 237:5 <b>looks</b> 135:20 178:25 222:19 <b>loss</b> 78:17 206:5,6 206:6 208:15 <b>lost</b> 129:12,14 169:24 189:22 209:1,15 214:12 <b>lot</b> 122:20 124:2 139:6 144:24 176:6 203:16 216:14 239:18 241:1 <b>lots</b> 74:6 175:11 <b>lou</b> 3:13 9:23 <b>loud</b> 179:6 230:22 235:21,22 <b>love</b> 126:25 <b>low</b> 112:18 165:4 165:4,4 166:1,14	166:17,17,18,18 166:19 167:4,4,9,9 167:9 168:25 169:1 172:4 180:8 181:3,4,5,6,8,11 181:23 184:8,17 186:4,6,16,23,25 187:7 235:17,18 236:9,21 237:9,17 238:24,24 239:14 <b>lower</b> 53:19 113:24 165:15 168:1 198:21 <b>lpc</b> 75:16 <b>lumbar</b> 166:6,10 <b>lunch</b> 111:5,13 <b>lupus</b> 26:19  <b>m</b>  <b>m</b> 3:12 221:17 222:20 <b>m.d.</b> 5:10 <b>m.d.....</b> 4:24 <b>m.d.....</b> 6:7 <b>mac</b> 142:11 <b>mac's</b> 132:15,20 133:23 134:8 <b>macromastia</b> 80:25 <b>madam</b> 245:10 <b>main</b> 226:17 <b>maintains</b> 86:13 129:20 <b>major</b> 37:24 196:21 242:13 <b>majority</b> 120:23 204:21 205:4 206:9,11,15,25 207:7,15,17,18 208:5,6,11 215:13	215:21 216:17,18 226:15 228:6 241:5,14 <b>maker</b> 87:21 <b>makers</b> 196:20 <b>making</b> 58:19 76:19 112:19 144:6,8,11 158:13 160:14 161:2 175:13 176:20 178:4,11 183:20 187:13,15 203:15 210:20 231:15 <b>male</b> 81:12 98:22 157:2 <b>males</b> 101:16 150:23 151:1,3,9 166:4 226:6 <b>malign</b> 129:11 <b>man</b> 91:16 92:11 92:18,20 93:5 94:4 143:1 <b>manage</b> 236:8 <b>management</b> 49:11 <b>mandate</b> 131:12 233:17 <b>manifest</b> 70:24 <b>mannerly</b> 197:9 <b>march</b> 22:6 42:1 43:6 50:11,12 53:16 62:15 63:8 198:1 201:6,7,14 201:19 202:14 205:23 218:6 <b>marci</b> 6:7 <b>marcie</b> 129:17 232:3 <b>marital</b> 22:21 28:2 28:3,12,16,24 37:2 59:3,5,7,8 63:24	64:2 <b>marked</b> 4:21 18:9 18:14 19:4 20:25 21:3 53:3,10 64:7 65:6 76:23,24 88:16,22 97:5 100:21 105:14 106:5 113:7,18 125:20 126:5 131:9 140:19 155:22 156:4 161:14,19 164:2 164:13 177:11,16 189:5,18 190:14 193:10 194:10,17 217:20 218:3 221:1,19 224:13 227:16,23 <b>market</b> 3:3 <b>marriage</b> 75:16 <b>masculine</b> 101:14 127:2 202:3 <b>masculinizing</b> 166:8 <b>mass</b> 84:14 <b>massachusetts</b> 84:16 <b>mastectomies</b> 84:14 85:4 <b>mastectomy</b> 80:22 134:21,22 <b>master's</b> 142:22 <b>match</b> 91:2 <b>matches</b> 91:3,3,4 <b>material</b> 65:9 89:5 195:25 <b>materially</b> 93:18 <b>materials</b> 145:12 <b>math</b> 219:5,6 <b>mathematical</b> 207:7
--	---	--	---

<b>matter</b> 9:4 48:19 68:19 77:6 83:5 92:5 96:22 <b>matters</b> 48:5 87:7 87:25 96:11 102:6 <b>maturity</b> 228:9 <b>mccuskey</b> 3:15 9:22,24 10:1 <b>mean</b> 13:11 15:21 19:16 20:1 29:2,2 31:9,13,14 33:21 38:2,11,13 40:1,3 47:20 50:2 51:13 59:22 62:8,10 66:2,5 79:1,12 80:17,20 102:15 110:21 116:25 117:10 118:18 123:21 136:20 137:12 142:17,24 146:6,6 149:6 156:15 159:3 172:3 174:7,8,15 175:16 177:13 189:11 202:12 203:5 207:1 210:16 213:17,20 219:3,12,13 223:21 225:11,12 225:12,13 226:10 226:12 230:21 242:23 <b>meaning</b> 60:12 151:12 152:18 173:22 <b>meanings</b> 31:25 <b>means</b> 35:10 40:19 60:12,13 63:9 67:14 73:18 85:18 86:22 146:9 152:16 154:5	157:4 174:15,19 191:4 <b>meant</b> 12:14 56:22 96:7 154:6 215:9 215:11 234:22 <b>measure</b> 127:15 <b>measured</b> 173:2 <b>media</b> 9:3 50:24 83:18 111:8 150:2 185:21 <b>medicaid</b> 14:6,12 68:3,5,13,14 73:4 73:11,16,18,19 85:7,20 86:3,12 132:5 133:8,9 134:18 135:17,18 210:3,5,6,9,11 211:8,20,23 212:6 212:16 213:6 214:13,21 217:3,7 217:11,15 218:13 218:16,21 233:10 233:17 <b>medical</b> 3:10 6:18 12:12,23,23 13:6,6 14:5 31:23,24 35:18 40:22 45:5 45:6,10 54:20,23 69:12 74:3 88:11 91:15 94:5 106:25 107:8 108:13 122:6 123:1 130:11 135:14 136:15 138:15 139:11,16 140:1 157:7 158:21 161:20 162:3,17 186:20 191:22 192:1,23 195:16 196:21,23 202:2,2 208:2 215:13,22	215:25 233:23 236:7 <b>medically</b> 69:14 <b>medicare</b> 67:23 130:22 132:5,7,9 132:19 133:25 134:1,5 135:14 233:9 <b>medication</b> 11:21 238:12 <b>medications</b> 26:4 143:24 162:5 210:6 <b>medicine</b> 11:25 30:13 31:2 38:5 39:5 106:6 120:18 121:4 196:22 <b>meet</b> 208:24 <b>meeting</b> 17:6 52:22 198:2 <b>meets</b> 52:3,6 <b>member</b> 39:18 40:12 66:10 67:9 149:17 212:16 <b>member's</b> 85:21 86:17 <b>members</b> 34:3 36:6 55:15,18,22 56:4 66:16 75:3,5 84:14 86:14 91:14 127:25 211:23 212:6 213:1,6 218:16,18,21 <b>memo</b> 233:9,17 <b>memory</b> 46:16 <b>men</b> 151:4 <b>mental</b> 27:16 28:14 43:1 44:17 44:25 45:7 52:10 56:5 68:20,25 107:5 226:9 236:7	<b>mention</b> 66:24 154:8 161:11 229:1 <b>mentioned</b> 25:9 39:9 46:21 49:1 58:15 101:2 145:3 161:13 221:22 <b>met</b> 61:8 89:21 157:1 213:23 241:15 <b>method</b> 167:25 178:14 182:12 226:3 236:13 <b>methodologic</b> 130:25 143:12 <b>methodological</b> 105:4 <b>methodologist</b> 122:13 <b>methodologists</b> 40:11 122:14 <b>methodology</b> 120:21 <b>methods</b> 40:23 145:18 226:15 <b>middle</b> 41:16 89:12 99:10 168:5 170:4 179:15 <b>midgen</b> 152:23 153:18 <b>midwest</b> 245:17 248:1 <b>millions</b> 211:5 <b>mind</b> 66:21 80:24 178:9 208:23 216:7 <b>mind's</b> 178:9 <b>minimal</b> 166:13 236:2 <b>minimum</b> 241:12
---	---	---	--

<b>minnesota</b> 244:3 244:24 <b>minority</b> 6:2 113:1 113:20 115:17 116:3 <b>minors</b> 107:4 <b>minute</b> 17:4 77:13 83:10 88:24 101:16 122:22 149:20 156:14 164:5 204:7 209:9 223:7 225:16 <b>minutes</b> 83:12 137:11 143:4 <b>mischaracterize</b> 129:10 137:25 <b>misgender</b> 129:10 <b>misled</b> 92:23 <b>misrepresents</b> 99:19 <b>missing</b> 22:16 23:21 100:18 104:10 157:18 159:4,6 <b>mission</b> 99:14 <b>misspoke</b> 181:6 <b>misstates</b> 147:24 <b>mistake</b> 23:9 146:3 <b>misunderstand</b> 233:7 <b>misunderstanding</b> 183:1 <b>misunderstood</b> 118:11 160:16 <b>mix</b> 140:1 <b>mm</b> 11:1 105:17 148:12 189:1 194:7,14 199:7 216:25 225:4	<b>model</b> 125:2 199:10 232:21 233:3 <b>moderate</b> 169:3 <b>modern</b> 103:4 <b>modify</b> 232:14 <b>moment</b> 18:3 20:24 49:20 53:5 53:22,23 58:19 66:22 67:13 76:22 83:6 86:23 88:15 100:20 104:11 110:18 111:3,24 113:9 121:10 125:3 128:9 131:6 152:11 155:21 167:17 209:7,10 225:20 229:18 <b>momentarily</b> 105:15 <b>moments</b> 61:19 <b>monday</b> 201:25 <b>money</b> 31:21 222:14 <b>monitor</b> 20:18 <b>monitoring</b> 122:20 <b>month</b> 50:8 57:4 75:10,10 201:6,7 218:16 <b>months</b> 76:17 78:5 78:24 84:8,10,13 97:21 119:14 163:8,8 166:7,11 166:11 176:16 202:23 <b>moral</b> 160:19 <b>morbid</b> 157:5 <b>morning</b> 10:10,11 <b>move</b> 104:12 105:21 184:25	<b>moved</b> 59:14 63:21,23 <b>moving</b> 178:13 197:19 203:18,21 <b>multidisciplinary</b> 236:7 <b>multiple</b> 16:20 37:12 38:1 150:16 <b>mysterious</b> 144:11  <b>n</b>  <b>n</b> 16:24 113:22 225:9 226:18,19 <b>naivete</b> 127:7 <b>name</b> 9:8 16:21 17:9 30:11 36:24 48:14 49:1 50:4 52:12,14 59:25 60:6,8 63:18 142:25 145:9,9 146:16 245:6 246:3,4,15 247:3,4 247:21 <b>named</b> 113:21 145:23,24 213:8 <b>names</b> 36:11 43:9 146:7 228:22 <b>narratives</b> 162:21 163:22 <b>narrow</b> 82:20 204:23,23 207:21 <b>national</b> 26:17 31:5 51:13 132:5 132:17,18,20 134:8 192:9,10 <b>natural</b> 208:2 221:5 <b>nature</b> 75:19 107:2 108:16 <b>navigate</b> 104:20 112:8	<b>naysayers</b> 129:9 <b>ncd</b> 132:12 <b>necessarily</b> 12:16 16:7 82:6 101:19 136:13 143:6 151:19 195:14 <b>necessary</b> 34:15 61:20 69:14 132:23 133:3 134:11 172:8 <b>necessity</b> 130:11 <b>neck</b> 166:6 <b>need</b> 11:8 14:5 18:2 25:2 33:22 64:10 68:21 72:3 76:25 79:10 84:11 84:12 85:21 88:18 102:23 111:19 122:11 127:14 131:21 137:9 138:23 144:2,3 153:17,17 156:13 157:7 159:10 184:4,21 187:22 192:11 197:20 207:2 208:8,17 211:24 212:7,16 212:20,23 213:2,7 <b>needed</b> 157:25 <b>needs</b> 6:14 10:22 21:25 34:21 86:3 93:13 156:6,24 157:11 158:20 207:8 213:23 <b>negative</b> 127:19 <b>never</b> 49:7 61:7,13 66:21 67:8 76:19 89:7 110:10 152:20 172:10 205:21 206:13,19 208:12
---	--	---	--

[new - okay]

Page 33

<b>new</b> 11:5 37:4,7 59:14 67:18 74:8 75:15 79:9 80:6 82:21 83:4 106:18 125:23 127:20 137:18 144:9 196:21 202:7,18 224:17 <b>newly</b> 105:2 <b>nguillory</b> 2:18 <b>nice</b> 68:19,23 69:6 <b>nicholas</b> 2:12 <b>night</b> 16:17 <b>nine</b> 242:5 <b>nod</b> 10:25 <b>noncoverage</b> 132:17 <b>noninvasive</b> 215:16 <b>nonprofit</b> 32:15 <b>norsworthy</b> 49:4 <b>notably</b> 157:8 <b>notarized</b> 245:14 <b>notary</b> 244:24 245:25 246:10,18 247:15,23 248:23 <b>note</b> 12:11,13 76:18 130:8 187:13 245:12 <b>noted</b> 117:15 <b>notice</b> 178:5 <b>noticed</b> 187:19 244:10 <b>noting</b> 112:19 <b>notion</b> 171:13 <b>notwithstanding</b> 154:17 <b>november</b> 22:17 23:6,15 51:16 <b>nuance</b> 13:4 71:17 92:10 175:23	<b>nuanced</b> 94:22 175:25 <b>nuances</b> 40:18 93:25 94:1,3,10,11 172:17 <b>number</b> 1:25 25:24 30:14 38:4 38:23 46:14 49:23 62:21 67:10 78:4 78:24 84:16 105:4 105:6 112:24 114:24 116:1 130:24 131:24 155:11 157:15 158:10,23,24 159:12 160:6 167:21 168:18,20 176:7 178:2 183:13,14 202:19 212:10 218:15 220:5 234:5,18 239:10,12 245:7 245:13 <b>numbered</b> 89:9 162:10 228:13 <b>numbers</b> 38:4 53:19 77:14,21 98:18 113:23,25 159:16,17,18 161:5 163:1 180:10 194:21 198:20 212:3 217:1,5 247:7 <b>nutrient</b> 179:20	<b>object</b> 14:18 91:20 94:19 <b>objection</b> 71:25 72:10 73:12 85:9 85:23 86:6,21 92:15 93:12 94:25 119:11 133:11 134:19 163:3 231:5 232:22 233:4,19 235:19 238:1,21 239:4,16 240:2,2,14,25 <b>objections</b> 4:15 <b>objectives</b> 115:15 <b>observing</b> 150:17 <b>obviously</b> 23:18 148:20 <b>occasion</b> 29:5 56:7 56:23 74:10 <b>occasional</b> 62:7,10 211:2 <b>occasionally</b> 29:18 57:10 64:4 66:8 139:16 <b>occasions</b> 15:12 <b>occur</b> 172:9 <b>occurred</b> 52:23 106:21 <b>occurring</b> 107:5 150:15,19 <b>october</b> 125:15 161:23 228:3 <b>offered</b> 48:10 51:17 65:24 120:21 121:7 <b>offering</b> 74:12 87:18 90:1 116:21 153:19 184:22 210:13 211:6,22 212:5,8 213:5 214:16	<b>offers</b> 89:15 <b>offhand</b> 56:8,18 57:2 <b>office</b> 19:24 56:12 107:15 <b>offices</b> 56:14 <b>official</b> 191:11,12 218:11,22 246:15 247:21 <b>oftentimes</b> 143:16 <b>oh</b> 16:25 17:4 22:14 25:16 53:13 56:11 65:18 76:21 77:2 79:7 90:7 101:13 107:18 110:19 150:20 156:7 162:6,8 164:9 175:21 177:12,21 178:1,7 180:9 190:24 196:4 201:15,22 203:14 210:12,18 212:4,17,21,21,24 214:7 219:14 223:21 224:21 227:20 228:2 230:21 231:25 237:22 238:13 239:5 <b>ohio</b> 205:20 245:2 <b>okay</b> 10:16,22 11:1,2,6,7,13,15 11:16,24 12:4,10 12:21 13:10,12,18 14:3 15:9,18,24 16:2,22,25 17:18 18:1,3,13,17,19 19:3,6,12,16 20:3 20:9,15 21:1,6,10 21:13,15,19,24 22:11,25 23:11,13
---	---	--	---



[okay - onsite]

Page 34

23:20 24:6,8,20	102:15,15 104:1,4	168:8,16 169:12	227:5,14,22,22,25
25:2,6,18,23 26:3	104:12 105:1,2,12	169:18,20 170:4	228:11,14,15,20
26:23 27:7,15	105:15 106:4	170:21 171:11	229:3,9,15,15
28:16,23 29:10,14	107:8 109:14	173:20,20 175:2	230:4,7,12,17,25
29:22 30:4,16,21	110:8,19,23,25,25	177:4,4,12,13	232:6 233:6,16
31:1,15 33:7	111:13,21 112:5	178:4,7,13,20	234:3,8,14,16
34:24 35:7 36:21	112:12,13,16,23	179:8,14,17 180:1	235:7,11,14,15
38:25 39:7,24	113:5,10,13,16,23	180:16,21 182:5	236:11,16,19,25
40:5,20 41:17,24	114:3,4,9 115:13	182:15 183:4	237:3,5,12,18,23
42:24 43:22,25	116:6,6,16 117:8,9	184:21 185:10	238:4,5,8,16,16,20
45:16 46:1,9 47:1	117:14 119:15	187:4,4,25 188:2,3	238:25 239:8,22
47:13 48:2,8,20,24	120:6,11,15	188:6,16 189:3,6,7	240:21 242:16
49:3,8,22 50:7,12	121:11,20,23,25	189:13,16,25	<b>old</b> 22:14 33:25,25
50:18 51:4 52:12	122:5,24 123:7,10	190:5,13,22 191:6	75:14 80:25 82:4
53:1,1,5,8,18,22	123:16,21 124:12	191:6,8,15,20	82:7,8 86:10
53:22 54:9,17	124:17 125:3,7,18	192:8,14,17,20,21	109:13,13 202:22
55:13,23,25 56:8	125:21 126:10	193:2,8,11,16,20	203:10 213:10
56:11,17 57:5	130:1,4,6,7 131:8	194:4,11,15,23	<b>older</b> 29:19,19
58:11 59:1,17	131:10,19,20	195:5,11,12 196:7	33:4
61:1,5,8,25 62:6	132:3 133:7,22	196:13,16 197:18	<b>oldest</b> 222:8
62:10 63:21 64:5	135:24 136:4,7,8,8	198:18,19 199:2,4	<b>once</b> 149:6,6
64:12,22,24 65:2,3	137:5 138:3,20	199:5,8 200:19	187:20 217:24
65:4,14,20 66:21	139:2,14,20,20,23	201:4,20 202:8	<b>one's</b> 96:12
66:23 67:19 68:6	140:20,23,23,24	203:4,12,15,15,15	<b>ones</b> 25:8 47:2
68:18 69:19 70:9	140:25 141:5,10	204:2,5,5,7,19,20	240:7
71:15 72:12 73:2	141:13,17 142:5,6	207:9 209:6,10,12	<b>ongoing</b> 96:22
74:12 75:1,12,25	142:13 143:3,3	209:18,22,24	128:15
76:3,6,9,21,24	144:19 147:6,12	210:7,13,20,25	<b>online</b> 6:15 22:22
77:11,12,17,19,24	147:22 148:1,6,19	211:22 212:18	34:18 35:3,4,5
78:7,11,21 79:23	150:7,11,12 152:7	213:20 214:3,8	36:17 114:13
80:9 81:12,15,18	152:22 155:8,15	215:4 216:22	117:5 156:6,24
82:10,18 83:3,7,8	156:2,12,18	217:13,18,22	157:1 161:23
83:14,23 84:2,4,5	157:14 159:2	218:1,8,8,9,14,20	177:22 188:21
84:22 85:5,17	160:25 161:10,11	218:24 219:9,14	228:3
86:25 88:14,17,20	161:16,17,25	219:14,18,21	<b>onlookers</b> 127:24
88:25 89:1,8,20,20	162:9,12,13 163:9	220:20,23 221:2	<b>onset</b> 107:4 150:14
90:4,10,11,12,19	163:17,21,25,25	221:12,14 222:1,6	150:18 151:11,21
91:7 92:8 94:14	164:11,17,21,25	222:6,12,17 223:4	151:22,24 152:16
94:22 95:22 97:2	165:10,12,13,17	224:6,11,14,16,22	152:25 242:7
97:7,22 98:7,14,20	165:25 167:14,18	224:24 225:5,6,16	<b>onsite</b> 60:15,21
99:1,7,8,12 101:4	167:23,24 168:4,4	225:20 226:1,5	

<b>ontario</b> 226:10 <b>open</b> 18:2 35:6,9 35:11,13,22,25 36:17 39:10 77:13 100:25 193:15 <b>opened</b> 17:25 <b>operate</b> 153:16 <b>operationalized</b> 241:3 <b>operative</b> 94:12,13 140:5 <b>opinion</b> 14:4 15:11 19:9,21 20:6 74:13 87:7,18 115:22 123:11 147:7,8 177:2 184:22 196:20 210:13 211:6,22 212:6,8 213:5 214:16 <b>opinions</b> 15:5 25:4 25:15,16 40:15 51:17 88:3 90:1 128:4 153:7,10,12 194:5 195:13 <b>opportunities</b> 146:18 <b>opportunity</b> 35:20 227:5 <b>opposed</b> 35:13 82:2 107:14 158:17 161:6 184:12 <b>opposite</b> 95:12 96:4 118:10 <b>option</b> 129:7 <b>options</b> 123:12 128:12 <b>orchiectomy</b> 206:19,20 213:16	<b>order</b> 120:10 149:16 162:21 163:22 208:10 <b>ordered</b> 244:11 <b>organization</b> 31:6 31:10,22 32:1 99:20,23 124:19 199:24 200:1,2 <b>organizational</b> 218:12 <b>organizations</b> 32:16 <b>organizer</b> 46:15 46:17 <b>orgasm</b> 129:5 <b>orient</b> 53:18 <b>orientation</b> 44:14 225:10 <b>oriented</b> 57:13,17 <b>original</b> 8:4,4 14:20 16:16 33:22 96:16 108:3 195:14,18 223:18 244:10 <b>originally</b> 34:12 <b>osteoporosis</b> 186:24 <b>ought</b> 51:18 <b>outcome</b> 143:11 143:11 162:19 186:22 <b>outliers</b> 206:9 <b>outlined</b> 157:10 <b>outpatient</b> 60:22 <b>outside</b> 84:23,23 153:15 168:12 <b>outweigh</b> 170:19 171:4,17 173:1 <b>overdose</b> 205:23 <b>overlap</b> 114:16 116:11 228:20	<b>overview</b> 207:14  <p style="text-align: center;"><b>p</b></p> <b>p.m.</b> 50:22 105:25 106:3 111:4,6,11 111:25 112:1,3 149:25 150:1,5 185:19,20,24 190:9,10,12 220:12,15,16,18 225:21,22,24 229:19,20,22 243:1,3 <b>p.s.</b> 222:9 <b>page</b> 4:4 12:18 22:14 25:23,24 41:24 42:5,11,14 42:19 47:13,19 53:6,19 58:13 61:22 62:3,4,4 65:1,8,16 77:11,13 77:17,20,20,22 78:7,19 79:18,20 79:23 81:15,15 84:1,2,4 89:8,9 90:10,12 91:10,11 97:23 98:17,17 99:2,7,9,9,10 104:17,21 106:11 111:15 112:7,10 112:11,14,21 113:23,24,25 114:3 115:12 116:12 120:11,12 124:12 125:8,16 125:22 130:2 136:2,5,6,7 139:21 139:25 142:2 148:5 150:8,12 155:13 156:12,16 162:9,10,12,14 164:25 165:10,12	167:18,19,21 169:20,23,25 177:24,25 178:2,6 179:14,15 182:13 183:2,6 188:1,2,4 189:2 192:18 194:21,24 195:8,9 198:19,20,22,24 198:25 199:1,3,6 200:13 209:14,20 211:1,1 214:5 215:4 218:7 221:3 224:24 225:3,16 226:2 228:12,12 228:13,14 230:4,5 231:7 235:12,13 235:14 236:12,25 238:6 239:1 245:13,15 247:7 248:3 <b>pages</b> 23:23 62:2 117:24 118:9,13 119:24 120:8 162:9 176:7,8 178:9 231:15,16 231:16 <b>palko</b> 106:17 <b>panicking</b> 202:24 <b>paper</b> 5:21 100:24 101:1 112:24 113:6,18,21 118:18,24 159:21 161:8 233:22 <b>papers</b> 101:2 152:1,10 160:17 160:17 <b>paradigm</b> 140:2 <b>paragraph</b> 42:20 61:22 62:3,4,6 65:15,16 66:23,24 90:12 91:10 95:10
---	--	---	---

[paragraph - people]

Page 36

97:9,11,12 98:20 99:9,13,18 100:3 104:22 106:15,24 107:25 108:19 112:13 114:12 116:7,13,17 117:5 119:22 120:7,12 120:15,16 121:3 121:24 124:14,15 126:13 130:3,5 131:2,12 132:3,10 132:11 136:1,5 139:23,24,25 142:21 150:12 162:13 165:8,18 165:21 168:5 169:21 170:1,4 171:12 176:10 178:22 180:25 183:5 188:3 192:19,21,25 197:11,13 209:14 209:22,24 210:25 214:8 215:5 216:22,23 225:2 226:5,13 230:18 231:1 234:14,15 234:16 235:3,3 236:16 <b>paragraphs</b> 234:9 234:11 <b>parameters</b> 220:2 <b>paraphilic</b> 102:5 <b>paraphrasing</b> 67:2 <b>parent</b> 200:11 202:1,9 <b>parental</b> 152:18 <b>parentheses</b> 228:6 <b>parents</b> 79:4,5 108:18 109:6,24 110:1,4,13 145:2	149:4 151:15 152:17 198:2,4,6 199:8,9,11,14,18 199:21,24 200:2 200:16,20 202:5 202:24 <b>parkersburg</b> 3:4 <b>part</b> 37:4 38:25 41:20 51:13 52:2 75:2,12 112:20 139:14 192:8 232:18 242:13 247:9 <b>partially</b> 91:3 <b>participant</b> 38:21 226:17 <b>participants</b> 111:19 217:10,15 226:6,14,15 <b>participate</b> 227:5 227:7 <b>participated</b> 40:13 166:21 <b>participating</b> 39:19 147:9 <b>participation</b> 102:12 <b>particular</b> 70:18 126:13 135:2,12 135:22 143:10 150:24 159:20 160:4,17,17 197:5 208:17 212:19 213:23 <b>particularly</b> 126:18 151:8 <b>parties</b> 244:11,13 244:15 <b>partner</b> 63:25 <b>party</b> 125:10 244:10	<b>pass</b> 35:24 65:21 81:2 92:2 95:12 95:19 96:4 <b>passages</b> 115:1 <b>passed</b> 65:10 <b>passive</b> 55:19 <b>pasted</b> 189:8 <b>pathway</b> 140:7 <b>patient</b> 61:9 69:5,9 69:11,19,20,23 70:2,5,8,15,19,21 71:4,19,21,23 72:19 73:1,3,6,10 73:13,23 74:5,9 93:15,17 136:25 137:2 139:11 174:25 206:19 210:22 215:15 227:10 <b>patient's</b> 72:16 108:25 137:1,2 175:1 <b>patients</b> 28:18 29:20 38:4,4 55:9 60:21 65:24 66:13 68:14,14,19 69:13 74:21 76:10,15 79:25 80:4,7 81:19,22 82:1,15 82:21,25 91:19,24 92:11 108:18 109:7,8 127:6,9,14 127:23 128:2,8,23 133:9 136:14 138:5 139:1 145:3 149:4 204:13,16 204:22,25 205:3 206:9,11,25 207:1 207:10,23 210:5 227:3	<b>pattern</b> 151:2 <b>pause</b> 93:20 94:7 122:11 <b>pay</b> 35:19 73:16 210:6 <b>paying</b> 75:25 76:3 <b>payment</b> 30:16,19 30:25 34:9,19,24 35:24 <b>pediatric</b> 7:1 66:11 106:23,25 177:17 186:1,17 237:20,24 <b>peer</b> 36:1,3,4,8,19 36:21 109:16,18 141:5 145:6 151:25 152:8 195:17 196:17 197:14 215:19 216:13 <b>penalty</b> 12:8 <b>pending</b> 11:9 <b>people</b> 6:2 12:24 13:15 19:23 26:8 27:14 29:3 30:9 35:16,17,23 36:5,6 36:10 40:10 41:21 44:17 45:1 46:5 55:17 57:15,21 58:1 60:24 68:25 68:25 70:23 72:4 74:1,7 75:7,11,12 81:5 88:4,11 93:9 95:6,7,14,18 96:4 96:20 98:23 100:1 101:11,14,16 102:10,16,23 103:13 104:2,8,14 109:11 113:1,20 115:18 116:3 118:5,12 121:16
---	--	---	---

[people - point]

Page 37

122:11,19,21,21 123:12,15,17,18 123:18,25 124:7 125:9 129:11 131:13 137:16,21 137:23 143:25 144:6 146:3,3,21 146:25 147:2 148:18 154:23 155:11 157:15,24 158:10 159:10,12 159:18,21,24,25 160:3,6,10,11,22 161:5 175:11,20 176:1,16 185:2 186:21 192:16 200:18,23,24 202:19,20 208:9,9 208:16,23 212:11 212:19,22 213:21 214:23 216:15,16 231:21 233:2 235:1 <b>people's</b> 94:11 <b>percent</b> 97:15 120:19 121:5 200:23 207:1 217:9 219:10,14 228:7 <b>percentage</b> 210:8 218:25 219:3,15 <b>percentages</b> 207:4 <b>perception</b> 192:15 <b>perfect</b> 204:5 222:6 <b>perform</b> 94:6 <b>performed</b> 37:7 41:4,21 <b>performing</b> 114:22	<b>perinatal</b> 127:21 <b>period</b> 55:11 62:12 78:17 86:5 136:25 226:24 227:2 <b>periodically</b> 82:15 82:16 <b>peritoneal</b> 127:21 <b>perjury</b> 12:8 <b>permanent</b> 127:9 <b>permitted</b> 39:17 <b>persist</b> 204:10,22 206:16 207:18,23 207:23 208:13 241:18,18 <b>persisted</b> 205:11 <b>persistent</b> 213:10 <b>person</b> 45:19,20 46:19 56:11 72:14 81:12,13 83:4 91:1,2 92:17 103:18,19,20,24 109:10 134:22 137:17 138:9 140:6 141:24 142:14,15 172:14 172:15 187:3 205:7,14,15,18 206:5,17 213:8,23 <b>person's</b> 93:24 141:19 169:16 170:15,24 173:16 174:5,12 206:6 <b>personal</b> 108:24 108:25 109:1 175:7,9 <b>personally</b> 29:2,4 29:5,19 80:8 82:2 83:5 84:18 200:16 246:11 247:15	<b>persons</b> 6:24 127:2,16 128:15 129:11 164:15 169:13 170:12 174:1 244:15 <b>ph.d.</b> 226:22 <b>pharmaceutical</b> 26:3 <b>phenomena</b> 186:5 186:14,16 187:6 187:17 235:2 <b>phenomenon</b> 28:8 28:9 97:1 102:9 150:14 151:12,20 153:20,21 154:15 157:21 159:23 163:6 212:2 <b>philanthropic</b> 31:8,13,14 <b>philosophical</b> 59:18 <b>philosophy</b> 59:21 <b>phone</b> 109:25 245:3 <b>phrase</b> 98:1,5 119:17 157:19 168:17,19 183:12 183:13 234:21 235:4 239:9,11 <b>physical</b> 216:9 <b>physician</b> 173:14 <b>physicians</b> 210:19 210:23 211:10 <b>physiology</b> 96:21 216:21 <b>picture</b> 54:4,5 <b>piece</b> 33:2,2,3,4,6 <b>pioneers</b> 105:10 <b>place</b> 1:20 57:8 132:19 195:24	<b>placed</b> 195:22,25 <b>places</b> 154:2 197:19,21 231:9 <b>placing</b> 44:10 <b>plaintiffs</b> 1:7 2:3 9:15,17,20,24 13:24 23:7 89:22 89:24 90:2 <b>plan</b> 33:1 73:4 214:14 <b>plans</b> 210:15 218:16 <b>plastic</b> 66:12 <b>play</b> 185:6,6 <b>players</b> 94:15 <b>playing</b> 50:10 <b>plead</b> 154:21 <b>please</b> 9:12 10:3 10:23 11:3,8,14 16:2 21:17 23:12 33:20 37:5 42:18 43:9 50:20 65:18 77:17 84:2 88:23 101:7 104:24 105:20 111:3,17 111:23 113:24 124:13 137:12 139:21 156:12 162:9 163:16 167:25 177:24 179:14 187:13,22 196:3 199:3 225:21 226:2 229:18 230:2 234:12 245:11,11 <b>pleased</b> 185:8 <b>pllc</b> 3:2,15 <b>pocket</b> 73:16 <b>podcast</b> 24:2 <b>point</b> 12:20 14:22 15:25 39:23 43:1
--	---	---	---

[point - previously]

Page 38

59:25 60:9,17 73:20 97:25 117:25 121:8 127:3 135:19 137:17 145:20 153:14 159:4,6,8,8 160:14,24 173:4 176:1,10,15 178:12 179:8 180:1 191:9 194:24 206:7 208:4,4 222:3 229:12 <b>pointed</b> 119:22 120:17 121:3 231:14 <b>pointing</b> 119:2 211:15 <b>policies</b> 133:14 <b>policy</b> 7:20 74:15 132:18,20 133:17 133:18,18 134:8 185:7 221:21 <b>policymakers</b> 45:11 95:2 <b>political</b> 44:24 197:7 232:12 <b>politician</b> 87:21 <b>politicians</b> 232:12 <b>ponce</b> 2:6,22 <b>poor</b> 124:6 179:20 <b>population</b> 132:9 162:2,16 <b>portion</b> 20:10 173:22 <b>portions</b> 51:6 126:12 147:23 <b>portrayal</b> 126:21 <b>portrayed</b> 126:19 <b>posed</b> 143:17	<b>poses</b> 74:8 <b>position</b> 13:23 14:4 232:14 <b>positive</b> 204:16 <b>possibilities</b> 74:6 <b>possible</b> 11:1 45:9 95:11 96:4 123:22 127:12 146:10 186:3 187:5 203:23 204:1,3 <b>possibly</b> 84:18 129:4 213:19 230:1 <b>post</b> 94:12,13 115:9 129:7 <b>posted</b> 194:18 <b>potential</b> 127:7,16 129:6 <b>potentially</b> 13:8 46:14 <b>practice</b> 6:1,25 7:3 60:17 63:18,19,25 64:1 67:19 75:2,2 80:15 113:1,19 114:8 115:5,16 116:2 117:12 139:7,15 164:16 164:22 168:1 177:19 178:15 182:13 205:2 215:1 236:14 <b>practiced</b> 60:21 <b>practices</b> 108:5 <b>practicing</b> 67:4 <b>practitioner</b> 136:21 <b>practitioner's</b> 107:14 <b>practitioners</b> 172:16	<b>pre</b> 140:5 <b>precedent</b> 45:2 <b>predetermined</b> 136:14 <b>predict</b> 213:12 242:11 <b>predicted</b> 241:17 241:17 <b>predilections</b> 102:12 <b>predispose</b> 92:24 <b>preferences</b> 169:17 170:16,25 174:6,13 <b>prefers</b> 174:25 <b>prejudices</b> 157:6 <b>premature</b> 187:1 <b>prematurely</b> 88:4 <b>preparation</b> 15:23 17:3,15 43:13 <b>prepare</b> 15:9 16:3 <b>preparing</b> 43:17 119:13 <b>prepubertal</b> 26:11 27:7,25 62:17 240:6 <b>prescribe</b> 179:19 <b>prescribed</b> 200:17 200:21,21 <b>prescription</b> 197:24 <b>prescriptions</b> 108:12 <b>presence</b> 96:15 134:25 <b>present</b> 3:23 56:1 56:5,7,23 72:4 101:20 199:25 <b>presentation</b> 56:17 83:2	<b>presentations</b> 55:6 152:9 <b>presented</b> 31:19 32:10 56:24 101:23 122:13 176:14 226:22 <b>presenter</b> 57:3 <b>presenters</b> 55:18 55:20 <b>presenting</b> 57:1 <b>preservation</b> 214:9,14 <b>president</b> 124:23 128:5 <b>pressure</b> 130:9,15 131:5 <b>pressured</b> 130:14 <b>presumably</b> 123:16 <b>presume</b> 25:22 129:14 142:20 210:5 <b>pretty</b> 121:18 148:15 173:18 175:24,24 213:12 216:15 <b>prevailing</b> 130:11 <b>prevalence</b> 162:19 162:25 163:19 240:23 <b>prevent</b> 11:18,22 <b>prevention</b> 7:2 177:18 179:16,16 <b>previous</b> 20:8,8 24:25 27:11 39:13 40:2 42:24 76:20 82:23 96:2 103:8 179:1 180:25 189:23 198:10 <b>previously</b> 16:14 32:3,4,14,19 51:5
---	---	--	--



[previously - psychologically]

Page 39

136:9 138:11 204:19,21 <b>primarily</b> 83:1 <b>primary</b> 67:8 <b>principle</b> 12:20 26:20 126:24 <b>printed</b> 141:2 <b>printout</b> 65:8 89:2 <b>prior</b> 15:24 19:20 80:11 129:1 151:13 152:19 178:12 235:25 <b>prioritize</b> 105:9 <b>prison</b> 49:16 50:3 <b>prisoner</b> 48:19 49:4 <b>private</b> 27:16 61:14 63:18,19 68:1,9 73:17 75:2 102:6 215:1 <b>privately</b> 230:21 230:23 234:8 <b>privileges</b> 60:23 <b>pro</b> 26:4 87:18 <b>probably</b> 22:2,5 22:12 30:23 41:16 52:17 58:23,23 62:17 65:10 68:13 75:10 79:3 81:9 84:7 100:15 154:13,24 167:1 181:13 190:18 199:11 211:12 212:10 <b>problem</b> 74:1 144:2,5,13 160:18 160:19 186:21 191:17 208:14 241:2 242:11,13 <b>problems</b> 28:10,20 59:10,21 105:4	110:3 149:1 158:2 173:7 195:2 200:7 <b>procedure</b> 246:5 247:5 <b>procedures</b> 99:17 <b>proceed</b> 10:3 <b>proceedings</b> 243:2 <b>process</b> 20:1 36:1 43:17 137:23,25 139:9 144:10 146:25 208:9 216:3 <b>processed</b> 179:24 <b>processes</b> 138:25 140:4 <b>production</b> 245:15 245:17,22 <b>professional</b> 42:21 45:7 75:17 99:23 116:9 128:4,25 138:8 175:6,17 176:21 <b>professional's</b> 43:2 <b>professionals</b> 44:25 52:10 212:12 221:4 236:8 <b>professor</b> 54:19 60:11,13,14 192:22,22 193:21 <b>professors</b> 57:15 <b>profit</b> 32:15 <b>program</b> 14:6 17:19,21,25 28:3 35:11 60:20 61:2 61:4,9,12,16 65:15 73:11,19 85:7 86:12 132:19 133:8 134:18 135:20 210:3,11	210:21 211:9,20 226:9 <b>programs</b> 5:7 64:16 65:23 <b>prohibit</b> 85:19 <b>prohibited</b> 107:17 107:20,23 124:10 <b>prohibits</b> 86:4 <b>project</b> 30:20 31:23 34:23 <b>promise</b> 208:11 <b>promised</b> 205:10 <b>promoted</b> 108:5 <b>pronouncements</b> 118:2 <b>pronouncing</b> 155:17 <b>proper</b> 124:8 <b>proportion</b> 215:14 <b>proposal</b> 32:20 <b>proposed</b> 203:6 <b>proposes</b> 118:2 <b>proposition</b> 112:23 228:5 <b>protocol</b> 108:4 115:10 117:19 118:7,8 119:9 123:24 241:4,8 242:2 <b>protocols</b> 45:1 99:24 122:19 124:8 <b>proved</b> 114:21 <b>proven</b> 143:19 <b>provide</b> 15:5 24:17 45:19 69:4 100:9,11 109:5 123:13 135:21 136:9 145:5 154:2 176:18	<b>provided</b> 12:24 33:8 36:11 43:22 45:24 47:17,22 48:22,25 69:4 70:4 71:18,23 72:8 78:5 80:15 80:21 101:5 108:12 155:16 192:24 193:20 204:9 205:1 215:15 219:25 <b>providers</b> 56:5 203:18,21 <b>providing</b> 12:8 41:1 57:9 93:22 110:19 123:11 139:4 145:1 160:8 241:11 <b>provision</b> 57:17 <b>prudent</b> 146:24 <b>pseudonym</b> 142:4 142:18,20 <b>psychiatric</b> 66:25 67:10 143:20,24 144:1,4,13,18,21 208:20 <b>psychiatrist</b> 45:7 46:20 94:10 <b>psychiatrists</b> 52:11 56:5 57:14 61:12 <b>psychiatry</b> 46:24 47:6 52:8 54:19 57:14 223:3 224:8 224:20 <b>psychological</b> 105:9 144:10 157:4 158:21 159:9 187:3 <b>psychologically</b> 69:17,18,22 70:4
--	---	--	--

<p>93:20 241:22  <b>psychologist</b> 75:15  <b>psychotherapeutic</b>  137:23 143:22  144:4 146:24  <b>psychotherapy</b>  42:15 52:18 80:1  89:17 101:23  106:19 136:13,19  136:20,21,22  137:7,12,13,24  138:6,8,19,21,25  139:5 140:3,5  143:12 144:3  145:14 147:5  205:9 215:16  241:23  <b>pubertal</b> 129:7  151:11,12  <b>puberty</b> 13:8  16:11 39:20  106:19 107:3  123:3 126:18,20  126:23 127:13,18  128:11 129:1,3,5  150:25,25 197:24  204:11 209:25  210:14 241:8,9,10  241:12,20,24,25  242:5  <b>public</b> 87:23,24  88:1,3,4,6 188:7  244:24 246:10,18  247:15,23 248:23  <b>publication</b>  106:10 222:18  228:23  <b>publications</b> 22:15  22:16 24:9 35:14  39:13</p>	<p><b>publish</b> 30:5,7  38:22 51:14  <b>published</b> 16:6,9  22:13,21 23:15  31:16 32:4 34:18  35:1,6 36:17,21  37:22 39:1,4,7,14  41:12 51:15  109:21 112:16  114:19 115:16  124:2 126:8  129:18 145:6  153:1 160:12  161:23 163:7  164:22 167:1  177:21,22 188:21  200:9 222:9,14,15  222:18,19,20,21  222:22,23,24  223:2,3,8,9 224:7  228:2,2,3 236:2  239:22 240:22  <b>publisher</b> 35:19  <b>publishing</b> 52:4  <b>pull</b> 43:19 127:21  153:24 161:12  <b>pulled</b> 43:19 97:7  <b>pulling</b> 185:2,4  <b>purely</b> 227:6  <b>purpose</b> 14:8  114:7 135:10  153:10 157:1  162:1 163:21  <b>purposes</b> 12:17  82:11 93:8 134:23  197:1  <b>pursue</b> 207:10  <b>pursuing</b> 206:16  <b>purview</b> 65:11  <b>put</b> 20:13 61:21  104:19 107:19</p>	<p>132:18 153:11  172:14,14 193:9  197:1 217:18  220:22 227:20  228:6</p> <hr/> <p><b>q</b></p> <hr/> <p><b>qualification</b> 67:8  <b>qualified</b> 231:11  <b>qualify</b> 84:12  123:24  <b>qualifying</b> 108:1  <b>qualitative</b> 158:18  <b>quality</b> 6:3 112:18  113:2,21 165:4,23  165:25 166:13,17  168:20,23,25  169:1,3,4 181:23  183:10 184:6,8,17  184:18 186:4,6,16  186:23 187:7  235:18 236:9,20  236:22 237:8,9,17  238:24 239:14  <b>quantify</b> 158:23  159:5  <b>quantitative</b>  158:18  <b>question</b> 11:3,4,5  11:9,10,13 14:19  14:21 23:12 24:1  25:10 27:9 29:1  30:1 31:11 32:9  33:5,13 37:5,19  39:2 40:2,18 41:6  42:18,25 43:5,21  47:8,11 50:15  52:5 58:17 68:7  69:24 70:1 71:1,2  71:7,13,17,17 72:9  72:11,13 73:5  77:24 78:1,15</p>	<p>79:24 80:2 81:24  82:21 84:4,12,21  85:24 86:11 87:11  87:12,19 92:7,16  93:3,6 94:9,21  102:14,16 103:8  103:25 104:7,7  116:24 120:10  122:25 123:2  124:6 136:17,18  136:24 137:6  139:2 143:16  145:20,20 158:15  159:1,14 161:9,10  162:23 163:10,11  163:14 164:17  171:10 174:14,20  186:5,12 187:4,5  187:12,22,23  188:17 194:25  197:4 199:17,19  200:19,24 201:21  204:23 206:3,8,8  206:23 207:2,6,17  207:20 209:2  213:4,4 215:19  217:16,17 233:7  240:3  <b>questioning</b> 155:3  155:5 239:18  <b>questions</b> 10:24  19:21 20:11,14  43:23 58:24 72:7  79:11 82:12 87:6  95:8 138:11 230:1  230:7,10,12 232:8  232:9,15 233:14  234:3 235:15  237:18 239:18,20  242:17</p>
--	--	---	---

[quick - received]

Page 41

<b>quick</b> 98:6 103:8 103:24 111:2 149:23 185:14 190:7 <b>quickly</b> 103:17 110:5 146:10 161:12 177:6 193:9 198:15 203:18,21 205:12 215:5 217:19 224:12 225:19 <b>quite</b> 12:11 47:23 160:24 <b>quote</b> 119:21 173:21 232:19 240:16 <b>quoted</b> 126:8 166:24 232:4 <b>quotes</b> 125:8 <b>quoting</b> 119:19 171:8,8 175:15 201:13	<b>rapidly</b> 196:15 216:16 <b>rare</b> 29:5 56:7,22 56:25 57:3 <b>rate</b> 76:4 160:9,11 160:13 215:7 221:6 234:25,25 235:1 244:11 <b>rates</b> 160:21 166:13 <b>reaching</b> 211:5 228:9 <b>read</b> 15:18,21,21 15:22,24 16:3,5,5 16:6,14,22 19:20 25:8 32:5 35:23 53:14 65:12 96:3 97:20,21 98:21 99:12,25 103:12 105:18 106:16 107:6 109:17,17 114:13 117:21 118:18 119:14 125:6 129:13,14 129:15 131:7,20 132:2 141:3 146:18 148:21 160:3 165:7,17 171:9 173:22 175:20,21 176:3 176:15,18 179:6 179:25 184:14 191:8 193:17 196:1,3,8,13,15 197:10 215:10,11 225:14 230:17,21 230:22,23 232:6,7 232:15,25 234:8 234:14,14 235:21 235:22 237:15 238:14 239:6	244:17 246:5,6,12 247:5,6,17 <b>reader</b> 35:11 175:5,6 <b>readers</b> 194:5 <b>readiness</b> 149:11 208:24 <b>reading</b> 15:15 25:11 34:6 65:17 104:23 119:13 135:12,23 162:15 166:21 170:22 174:22,22 175:13 221:15 230:20,24 231:1,6 234:10 236:24 238:15 240:4 245:19 <b>reads</b> 97:12 114:5 120:16 195:12 <b>real</b> 142:9 149:23 160:18 190:7 193:9 225:19 <b>reality</b> 96:11 <b>realize</b> 60:6 190:19 220:6 232:13 <b>really</b> 19:22 30:13 42:16 66:16 79:14 87:8,25 92:4 94:8 103:10 105:18,19 108:22 111:2 120:8 142:11 146:9 152:16 154:22 155:4 161:12 167:3 172:10 173:15 174:18 175:23 176:13,18,24 177:5 198:9,15 200:25,25 207:1 208:13 211:14	224:12 <b>reason</b> 70:12 91:18,22 93:9 94:7,17 141:3 160:1,1 167:21 245:14 247:8 248:3 <b>reasonable</b> 71:10 132:23 133:3 134:11 182:1 <b>reasonableness</b> 117:23 181:14,15 181:22 <b>reasonably</b> 23:4 <b>reasons</b> 153:3 162:20 163:22 184:19 211:15 227:4 235:24 241:7 <b>reassignment</b> 6:10 13:16 108:1 132:7 132:13,21,22 134:9,10 <b>rebuttal</b> 15:18,21 15:22 <b>recall</b> 16:4,18 20:5 20:7 22:4 24:22 49:20,20 52:21 56:8,18 68:22 82:17 83:4 89:5 121:18,20,22 232:14 233:1 234:3 235:15 <b>recanting</b> 233:2 <b>receipt</b> 245:18 <b>receive</b> 30:2,4,21 169:13 170:12 174:1 <b>received</b> 26:17 27:15 29:23,24 30:7,17,25 31:16
<b>r</b>			
<b>r</b> 222:19 <b>r.j.</b> 222:19 <b>raised</b> 241:3 <b>raising</b> 44:8 <b>ran</b> 57:13 <b>range</b> 28:17 108:24 213:3,18 225:11,13 <b>ranged</b> 114:25 <b>rank</b> 60:13 <b>rapid</b> 34:3 108:10 150:14,18 151:11 151:21,24 152:16 152:25 198:5 199:10 201:8 203:22 215:7 242:7			

[received - regardless]

Page 42

32:19 161:23 189:10 219:22 <b>receives</b> 31:10 <b>receiving</b> 86:2 <b>recipient</b> 25:25 <b>recipients</b> 211:24 212:16 <b>recognition</b> 241:5 <b>recognize</b> 21:19 74:5 95:3 128:1,5 149:8 154:24 183:24 235:24 <b>recognized</b> 154:24 187:14 <b>recognizing</b> 182:6 241:13 <b>recollection</b> 78:3 80:13 82:20 84:22 <b>recommend</b> 168:18 179:18 183:12 184:1 199:16 236:6 239:10 <b>recommendation</b> 70:14,18 112:19 121:6 168:17 170:11 171:20,21 173:23,24,24 174:2 178:24 179:10 180:3,5,17 180:18 181:3,8,12 181:17,18,22 183:10,11,21 184:18,20 186:4 186:15,15,23 187:7 202:6 205:6 208:10 235:22 236:9 237:12 238:17,18,23,24 239:13,14	<b>recommendations</b> 45:10 99:20,22 114:5,15,17,20,24 115:3,8 116:1,9,14 116:20,22,25 117:6,11,16,18 118:5 119:4,7,18 120:2,20,25 143:18 144:15 168:7,17,19 169:14,15 170:13 170:14,23 171:6 172:1 173:13 174:4,7,11,15 175:20 182:17,20 183:8,12,13 184:1 184:10,11,16,22 185:12 186:5 199:16 230:9,19 231:8,11,14 237:23 239:9,9,11 <b>recommended</b> 148:18 172:21 208:19 <b>recommending</b> 175:22 180:23 <b>reconsidering</b> 22:22 101:9 <b>recontacted</b> 227:3 <b>record</b> 9:2,13 18:5 18:7,11,21,23 19:1 21:2 48:4 50:20 50:21 51:1 53:9 64:17 65:5 77:4 83:16,20 105:23 105:25 106:3 111:2,4,10,23,25 112:3 113:17 126:4 149:23,25 150:4 153:11 156:3 161:18	164:12 168:22 177:16 185:17,18 185:23 190:7,9,12 190:13 218:2 220:11,15,18 221:18 225:19,21 225:24 229:17,19 229:22 232:7,25 235:22 243:1 244:9 247:9 <b>recorded</b> 9:3 54:7 <b>recording</b> 54:13 <b>records</b> 25:7 <b>recruited</b> 226:16 <b>recruitment</b> 162:6 226:15,17 <b>recurrently</b> 216:2 <b>refer</b> 12:21 13:14 31:2 32:13 66:12 93:25 137:9 152:1 <b>reference</b> 58:11,19 76:20 100:16 117:4 121:15 122:12 135:3 154:3 155:1 157:18 166:19,22 171:19 176:20 178:11 190:19,21 195:3 245:7 246:2 247:2 <b>referenced</b> 15:17 16:7 151:21 152:2 222:1 246:11 247:15 <b>references</b> 58:13 160:4 <b>referencing</b> 58:20 59:11 61:18 228:16 <b>referrals</b> 151:20	<b>referred</b> 4:21 79:24 80:3 225:8 226:7 <b>referring</b> 12:19,23 13:15 40:20 130:20 166:19,20 167:11 185:11 231:2 <b>refers</b> 13:1,2 31:21 <b>refine</b> 215:23 <b>refined</b> 40:4 <b>reflect</b> 25:20 38:17 102:25 180:13 <b>reflected</b> 24:2 40:8 109:16 148:9 218:22 <b>reflecting</b> 148:23 <b>reflection</b> 70:16 157:24 201:8 <b>reflections</b> 5:19 22:17,18 140:9 <b>refresh</b> 21:11,13 42:8,10 53:5 58:22 64:14 65:1 76:25 78:2 88:18 112:9 125:25 190:2,2 194:12 227:18 <b>refreshed</b> 198:14 <b>refreshing</b> 217:24 <b>refused</b> 131:13 <b>refusing</b> 163:9 <b>regard</b> 27:11 191:21 207:5 <b>regarding</b> 49:4 115:17 126:14 127:4,15,18 128:2 166:2 232:3 <b>regardless</b> 85:20 123:21
--	---	---	---

<b>regards</b> 99:22 119:2 225:9	<b>remainder</b> 125:7	62:6 66:19,24	154:9 166:21,23
<b>region</b> 146:5	<b>remember</b> 13:10	76:20 87:1 90:4	174:23 176:18
<b>regret</b> 155:11	16:23 77:9 116:25	93:4 95:11 97:10	204:16 225:7
157:5,15 158:10	119:23 147:25	99:1 100:16	<b>represent</b> 15:7
159:12	161:8 189:13	104:16,18 108:9	65:7 97:17 98:10
<b>regular</b> 77:25	224:10 230:9,15	110:9 111:15	98:10,14 108:4
78:11 81:20	232:8,17,23	112:7 117:14	114:6 165:7
<b>regularly</b> 62:17	233:13 237:21	120:11 121:23	177:20 179:2
63:9 66:12 82:23	239:19	124:12 130:1,16	182:18 189:9
<b>reidentify</b> 228:8	<b>remind</b> 101:7	130:17,18 131:7	193:21 195:14
<b>relate</b> 27:20	<b>remote</b> 1:14 218:5	135:25 136:2	211:17 218:10
<b>related</b> 6:14 15:4,6	<b>remotely</b> 9:8	139:20 140:17	219:3 221:14
26:7,10,24 28:20	<b>removal</b> 15:1	142:1,3 144:24	235:1
33:2,3 37:17 39:5	81:11	147:12,24 149:19	<b>representation</b>
85:19 90:15,20,23	<b>removed</b> 148:21	150:7,16 152:2,23	65:23 98:13
90:25 91:4 97:1	242:9	153:6 154:8,9,9,22	<b>representations</b>
99:16 156:5	<b>removing</b> 86:9,9	155:8 158:6 159:8	210:20
230:13 232:19	<b>renamed</b> 59:13	161:1 164:25	<b>represented</b> 160:9
235:16 237:24	64:1	165:6 166:17,25	235:1
240:22	<b>reoperations</b>	167:11 169:20,22	<b>representing</b>
<b>relates</b> 92:3	211:2	171:2 174:16	24:20 89:1 121:11
239:25	<b>repeat</b> 11:15 37:5	176:3,4 179:4	126:10 213:1
<b>relating</b> 39:12	163:5	188:1 191:16	<b>represents</b> 142:19
<b>relation</b> 157:4,8	<b>repetitie</b> 110:1	192:18 197:18,20	168:8
232:18	<b>rephrase</b> 11:15	209:11,16 210:21	<b>reproducible</b>
<b>relationship</b> 60:14	25:13 72:9 86:12	219:16,23 220:4	40:23
66:4 75:20 91:2	93:3 186:14	221:2,3,11 228:5	<b>request</b> 151:7,8
135:18 138:9,17	<b>replace</b> 195:15	228:11 230:14	206:18,18 211:3
216:9,9	<b>report</b> 4:23 6:12	231:2,6 232:18	247:9,11
<b>relative</b> 244:12,13	13:21 14:1 15:11	234:5,17 235:16	<b>requested</b> 213:13
<b>relatively</b> 103:4	15:14,17,20 16:5,7	<b>reported</b> 1:24	227:11
<b>released</b> 147:20	19:9,13,14,21 20:1	244:6	<b>requesting</b> 212:14
<b>relevant</b> 132:14	20:8,8,10 21:22	<b>reporter</b> 9:10 10:2	<b>requests</b> 154:11
159:24	22:25 23:6 24:13	10:6,22 64:11	211:2
<b>reliance</b> 195:22,24	24:18,21,23 25:3,7	134:2 169:7,9,11	<b>require</b> 136:13
<b>relied</b> 25:4,8,14	25:9,14,15,16,23	196:2,5,9 246:7	169:15 170:14,23
153:12	25:24 26:17 41:24	<b>reporter's</b> 244:1	174:4,11 220:3
<b>rely</b> 159:14	42:3,5,12,19 43:24	<b>reports</b> 15:18,22	<b>required</b> 120:22
<b>remain</b> 126:15	47:8,13 49:7	15:22 20:4,6	153:8 245:25
127:20	54:17 58:12,20	24:16 25:1 32:25	<b>requirement</b> 81:3
	59:12 61:18,24	146:19 152:18	139:10 140:3,6



148:16 <b>requirements</b> 132:15 <b>requires</b> 10:16 195:17 <b>reread</b> 15:11,11 15:16 16:16 <b>rereading</b> 25:12 <b>research</b> 28:5 30:5 37:10 107:14 113:14 115:19 123:24 152:1,25 153:9,20 162:22 163:23 172:8,10 182:17,20 183:7 184:12,15,24 185:12 193:8 200:4 208:14 221:5 226:16,18 227:6,11 239:15 <b>researchers</b> 39:25 45:12 97:14 193:4 <b>reserve</b> 28:4 54:20 58:5 59:13 60:2 89:2 <b>reserved</b> 244:17 <b>reserving</b> 107:3 <b>residency</b> 60:20 <b>resident</b> 55:10 56:12 <b>residents</b> 55:8,14 55:18 56:6 75:13 <b>resolution</b> 221:6 <b>resources</b> 3:10 89:3 <b>respect</b> 27:10 <b>respectable</b> 145:18 <b>respected</b> 196:20 <b>respond</b> 11:3,10 23:12	<b>responded</b> 36:12 <b>response</b> 10:25 15:19 31:12 152:15 <b>responsibility</b> 72:25 73:8 195:19 195:21 <b>responsible</b> 94:9 160:7 <b>rest</b> 72:25 125:6 142:21 173:16 174:24 208:2 <b>restate</b> 71:13 <b>restroom</b> 48:7 <b>rests</b> 45:6 <b>resubmitted</b> 36:13 <b>result</b> 93:17 94:4 <b>results</b> 39:22 116:6 128:10 132:17 157:3 <b>retain</b> 60:13 127:6 <b>retained</b> 13:18 <b>retrospective</b> 151:14 <b>return</b> 103:24 158:3 206:8 <b>returned</b> 245:18 <b>reversal</b> 81:4 157:9 <b>reverse</b> 155:12 157:16 158:11 159:13 162:5 211:3 <b>review</b> 6:3 7:5 15:13 17:22 20:4 34:17 36:1,14,20 36:22 39:1,4,7,11 39:20,25 40:8,13 40:16,19,21 41:3,5 41:9,12,14,17 61:20 106:22	112:16 113:2,20 115:24,25 141:10 141:13,18,19 165:14 166:1 188:20 192:4,8,22 192:24 193:3,4,21 232:24 233:16 240:17 245:12 246:1 247:1 <b>reviewed</b> 29:10 36:4,4,8 39:16 85:13 109:16,18 130:22 140:10 141:5 145:6 151:25 152:8 189:11,12 195:17 196:17 197:15 215:20 216:13 <b>reviewer's</b> 117:19 <b>reviewers</b> 36:15 36:16 114:21 117:10 231:13 <b>reviewing</b> 89:5 141:24 183:24 186:1 <b>reviews</b> 40:11 41:18,21 141:21 154:10 165:2 166:16 167:9 188:8,10 240:22 <b>revise</b> 199:3 <b>revised</b> 105:2 <b>revisit</b> 115:9 <b>rhinoplasty</b> 213:15 <b>rich</b> 123:18 124:6 <b>richards</b> 142:11 <b>right</b> 10:19 14:14 19:10 23:19 24:10 24:12,18 25:4 26:1,5 28:11,18	29:13 31:6,9 32:17,21 35:2 37:15 38:5,6,16,18 38:19,22 39:1 41:2,13 42:4,11,11 42:13 46:3 47:20 48:22 49:6,25 50:10 51:7 53:20 54:3,10,20,23 55:3 55:4,16 58:3,16,17 59:1,15,16 60:10 61:10,16,17 62:18 63:22 67:21,24 68:6,9,21 69:7,14 69:23 70:6 71:22 72:7 74:23 75:3,7 77:14 80:11 82:5 87:2,14,15,23,23 88:12,13 94:24 97:2 98:3,12,18,21 100:1,14,18,23 101:6 102:18 104:7 106:13 107:10,16,23,24 108:7,13,16,21 109:6 110:10,16 113:8,10,24 114:1 116:20,22 117:2,3 121:17 122:3,7 123:5,6 126:1 130:4 133:5,6,10 135:8,24 136:10 136:16,17 137:15 138:3 140:16 141:20 142:2,5,8 142:19 143:9 147:7,20,23 148:10,13 149:17 154:2 156:2 157:12,16 158:7 158:22,25 161:7,9
--	---	--	--

[right - screen]

Page 45

161:11 162:11 163:2,23 164:23 165:22 167:16 168:2,2 169:24 175:18 176:5 177:15 178:13,22 180:5 181:16 183:4 185:14 187:11,12,13 188:6 189:2 190:18 191:15,18 191:19,23 192:1 192:17 193:3,7 194:2,4,6 196:16 196:18 198:5,21 202:10,12 203:13 204:11,13,17,22 207:24 209:16,17 209:19 210:15,22 211:9,24 213:14 213:24,25 214:6,8 214:16,17,24 218:18,22 219:16 219:17 220:2,5,10 222:24 223:9,14 223:17,23 224:9 227:9 228:17 229:8,12 232:4,23 234:11 235:9,12 236:12 238:25 239:5 244:17 <b>rights</b> 140:2 <b>rigorous</b> 124:20 <b>ring</b> 26:20 <b>rise</b> 74:10 215:7 234:23 <b>risen</b> 63:17 <b>rising</b> 154:10,11 154:14,24 <b>risk</b> 165:5 172:4 173:1 196:1	<b>risks</b> 69:10,21 70:3 95:14 173:2 188:20 <b>ristori</b> 228:1 <b>rocket</b> 213:17 <b>role</b> 5:19 43:2 81:6 140:3 148:4 185:6 <b>room</b> 125:11 205:23 <b>roomed</b> 205:18 <b>roommate</b> 205:17 <b>rotate</b> 113:25 <b>rounds</b> 47:3 55:6 <b>rpr</b> 1:24 244:24 <b>rule</b> 153:8 154:5 154:16 220:2 <b>rules</b> 10:12 149:2 246:5 247:5 <b>run</b> 73:23,23 <b>russo</b> 222:15  <b>s</b>  <b>s</b> 3:13 16:24 63:13 63:13 245:15 247:8,8 248:3 <b>safeguards</b> 203:24 <b>salaried</b> 60:12 <b>salary</b> 60:16 68:11 <b>sample</b> 157:2 225:7 <b>sanguine</b> 72:23 73:8 <b>sara</b> 113:22 <b>sat</b> 10:19 <b>satisfactory</b> 98:23 <b>satisfying</b> 127:13 <b>saw</b> 28:17 29:18 65:11 196:16 198:6 <b>saying</b> 33:18 36:22 40:5 41:3 87:16 92:12 93:3,8,13	95:14,16 96:1,10 96:17 103:12,13 104:3,8,14,14 117:9,18,21 119:1 123:10 129:23,24 131:3 133:14,19 133:22 134:14 135:24 144:2,7,21 146:1 151:23 153:14 158:12,22 160:7 169:9 170:17 171:15 172:6 174:15 175:4 178:5 180:9 182:19 185:1,4 191:8 198:11 201:22 202:23 206:14 207:22 208:3,7 211:10 212:22 213:22 216:14,17 <b>says</b> 22:7 47:8 78:11 95:11 100:3 103:9,18 108:20 114:9 116:7,17,18 117:5,14 121:9 132:4 133:23 134:7 140:14,17 142:3,20 155:9 156:23 158:9 165:21,25 169:20 171:1 173:24 174:4,10 175:25 177:21 182:12 183:6 184:4,5,24 188:6,18 194:4 197:15 215:11 221:8 222:3 236:19 237:7 <b>scale</b> 180:6	<b>scathing</b> 16:14 <b>schedule</b> 47:2 <b>scheduled</b> 45:20 46:22 79:6,8 <b>scholarly</b> 37:9 <b>scholarship</b> 34:7 <b>school</b> 54:20,23 202:2,2,4 219:7 220:7 241:6 <b>schools</b> 57:16 <b>science</b> 15:7 50:16 73:21 82:19 87:5 124:20,25 138:15 142:22 160:20 163:6 174:19,24 174:24 181:8,12 181:18 182:1,9 183:24 185:7 213:18 <b>scientific</b> 5:17 38:12 39:5 44:21 45:3,9 97:13 99:21 109:5,20 117:24 118:19 121:1 141:22 143:8,19 145:6,16 152:4 160:8,19 172:23 173:4,12 175:6 182:7 183:25 193:4 216:12,13 <b>scientifically</b> 145:17 172:25 215:20 <b>scientists</b> 141:16 141:16 <b>scope</b> 224:3 <b>scratch</b> 215:9 <b>screen</b> 7:10 17:19 18:15 46:14 53:24 54:3 61:21 64:14
--	---	--	---

[screen - sentence]

Page 46

83:25 111:18 189:24 193:22 227:18 <b>screens</b> 17:19 <b>scroll</b> 77:11,17 79:17 84:2 88:24 89:8,10 90:10 97:22 98:17 99:8 113:24 114:8 136:4 156:12 177:24 179:14 194:20 198:19 218:7 226:2 228:12 <b>scrolled</b> 88:25 <b>scrolling</b> 47:14 195:9 238:5 <b>scrotum</b> 86:9 <b>scrutiny</b> 100:5 <b>se</b> 87:6 <b>seal</b> 244:18 246:15 247:21 <b>search</b> 40:23 <b>searched</b> 115:21 <b>seattle</b> 16:11 <b>second</b> 21:8 64:8 65:15 89:8,9 97:11 104:24 105:23 112:6 120:16 130:4 132:4,10,11 136:1 146:2 155:18 162:7,15 165:20 166:1 169:24 171:14 174:16 180:1 183:5 184:4 189:16 191:25 194:9 209:15 215:11 217:17 222:12 226:13 230:17 232:11	<b>secondary</b> 127:16 <b>section</b> 26:16 65:15 91:9 118:9 124:21 148:25 157:21 195:6,10 195:12 230:8,13 230:18,18 <b>sectional</b> 6:15 156:6 157:1 <b>sections</b> 240:5 <b>security</b> 132:14 <b>see</b> 18:14,16,16,18 19:3 20:24 21:4 21:12,14 22:6,13 35:21 37:23 42:3 42:22 43:3,13 45:23 46:13 51:22 53:6,6,7,21 54:1 56:3 60:17 62:13 64:15,20 65:16,24 66:18 68:12 76:10 77:2,16,20,23 78:7 78:9,19,20 79:4,6 81:20,22 82:15 83:5 87:20 90:17 91:11 93:16 95:21 97:6 98:24 99:10 100:22 103:3 105:19 106:10 111:18,19 112:14 112:21 113:2,11 116:16 122:15 125:15,21,25 126:3 131:18,22 132:1 133:1 136:14,23 138:16 140:14,15,21 142:2,7 143:24 144:5 145:11,14 146:5,19 148:9 153:18 154:20	155:12,24 156:2 156:13 157:17 160:22 165:15,17 165:23 168:4,9,22 170:6 171:19,21 172:15 174:18 177:13,14 178:10 178:20 179:25 180:10,15,19 182:11 184:14 185:8,8 188:13,22 188:24 190:1 192:25 193:12 194:1,12,13,14 196:19 199:5 201:25 205:25 206:24 208:11,12 214:4,4 217:22,24 218:21,23 220:24 221:3,9,10 222:10 222:16 223:21,23 224:22 225:1,6,14 227:2,23 228:15 228:17,20 229:7 232:10,15 236:14 236:23 237:3,10 238:9 239:1,2 <b>seeing</b> 55:9 64:3 82:2,23 153:1,3 166:18 167:8 175:15 <b>seek</b> 128:10 <b>seeking</b> 128:23 217:2,6 <b>seen</b> 19:6 29:7,15 53:12 62:7,17 63:5,9 65:8 76:15 78:4,13,23 79:9,13 79:13 80:5,10 81:25 82:4,14 83:1 89:7 109:12	110:10 113:13,13 141:1 156:9 164:18 166:23 190:20 197:21,23 205:8 207:16,18 <b>segm</b> 31:2,5 32:1,4 32:19 33:8 34:3 36:6,19,19 51:24 52:3 101:5 191:14 <b>selected</b> 115:1 <b>selective</b> 40:17 <b>self</b> 5:20 101:12 102:17,22 103:10 104:8,14 186:25 <b>semester</b> 57:11 <b>seminars</b> 55:7 <b>send</b> 20:3 <b>sends</b> 36:9 <b>sensation</b> 127:6 <b>sense</b> 11:11 13:16 40:13 51:19 57:18 65:25 115:25 135:19 153:22 169:5,10 181:14 181:25 182:2 231:17 <b>sensibilities</b> 145:16 <b>sent</b> 20:7 24:7 36:10 200:3,7 <b>sentence</b> 20:12 42:22 90:17 91:12 95:11 96:3 97:11 98:22 99:13,25 100:3 106:24 112:20 116:7,16 116:17 117:4 118:8 120:16 121:2 125:7 130:8 130:20 131:11 132:4 133:23
--	---	---	---

134:7 141:11 148:4 149:8 155:6 155:9,15 156:19 157:18,19,19 158:9 162:1,7,15 163:17 165:19 168:5 170:5 171:12,14 174:3,7 174:16,17,18 176:11 178:22 183:5 184:4,5,23 185:10 215:6,9,11 215:19 222:3 234:21 235:5 237:3 <b>sentences</b> 96:3 149:9 174:22 178:18 227:1 <b>separate</b> 26:3 27:16,19 28:13 33:6,15 34:14 56:15 57:13 76:11 96:23,25 124:21 140:9 182:21 187:2 240:7 <b>september</b> 51:22 67:1 76:14 77:6 78:22 79:10 80:5 81:25 82:16,23 83:1 84:17,25 201:11 217:8 219:19 <b>serious</b> 105:4 146:2 159:22 <b>seriously</b> 216:1,18 <b>served</b> 23:1,7 47:17 58:15 128:19 <b>service</b> 43:12 57:16 67:16 192:10 214:22	215:1 226:8 227:3 <b>services</b> 3:10 49:11 57:18 61:15 65:23 68:9 89:4 115:5 130:9 132:5 151:7,8 195:4 218:13 227:7 233:10 <b>session</b> 4:9 111:7 <b>set</b> 28:2 103:20 122:8 156:20 163:16 <b>sets</b> 187:16 <b>setting</b> 115:20 122:8 <b>seven</b> 33:25 76:17 78:4,24 84:10,13 <b>seventh</b> 195:9 <b>sex</b> 5:15 13:16 16:12 37:1 39:21 90:15,20,24,25 91:1,4 95:15,16 96:2,6,10,16,17,18 96:24 97:7,14,18 106:19 107:3 123:3 166:2 197:25 214:10 228:8 235:25 242:7 <b>sexist</b> 157:6 <b>sexual</b> 22:17,21 26:4,18 28:2,3,7,8 28:12,16,21,24 44:10,15 57:13 59:4,5,7,8 63:24 64:2 102:2 127:5 127:7,9,13 216:9 225:9 <b>sexuality</b> 28:20 37:25 58:3	<b>shame</b> 74:6,8 <b>shameful</b> 102:5 <b>share</b> 17:18 <b>shared</b> 63:16 <b>sharing</b> 210:3,15 214:20 <b>sheet</b> 245:13 247:7 247:10,18 248:1 <b>shenanigans</b> 16:15 <b>short</b> 73:23 88:23 138:23 173:2,11 <b>shortened</b> 186:25 <b>shorthand</b> 137:9 139:8 <b>shortly</b> 16:1 88:17 150:25 <b>shot</b> 7:10 193:22 <b>show</b> 85:13 114:9 124:3 165:5 180:18 216:23 217:1,5 <b>showed</b> 157:3 186:11 187:5 <b>showing</b> 21:3 53:10 65:6 88:21 106:4 113:17 126:5 145:6 156:4 161:19 164:13 177:16 187:16 190:14 194:16 195:2 218:3 221:19 233:1 <b>shown</b> 241:14 245:16 <b>shows</b> 21:12 114:16 194:25 218:15 <b>shrrier</b> 125:13 126:15 129:17 232:3	<b>shrinking</b> 158:25 <b>shuman</b> 3:15 9:21 9:23,25 <b>shumanlaw.com</b> 3:19,20,21 <b>side</b> 77:21 104:19 116:13 165:22 168:2 227:20 228:22 239:1 <b>sign</b> 244:17 <b>signature</b> 244:23 245:14 <b>signed</b> 246:13 247:18 <b>significant</b> 108:4 130:9,15 131:4 148:4 166:5,10 <b>significantly</b> 166:5 181:19 <b>signing</b> 245:19 <b>sihler</b> 27:16 28:14 <b>similar</b> 114:17 <b>similarly</b> 1:6 13:14 <b>simple</b> 56:20 98:22 <b>simplify</b> 85:24 <b>simply</b> 94:1 108:22 146:6 155:4 <b>sincerely</b> 245:21 <b>singal</b> 16:24 <b>singh</b> 222:22 223:1 224:6,18 225:5 226:1,21,22 228:4 <b>site</b> 195:13,25 227:5 <b>sitting</b> 21:25 110:14,17
---	--	---	---

[situated - spoken]

Page 48

<b>situated</b> 1:6 <b>situation</b> 13:13 137:1,2 <b>six</b> 62:17 78:16,23 81:24 82:22 114:21 115:21,21 176:15 189:9 195:8 198:6 231:12 <b>size</b> 81:2 <b>skeptics</b> 128:17 <b>skin</b> 129:5 <b>skip</b> 165:18 <b>skipping</b> 200:13 <b>sl01</b> 18:14 19:4 <b>sl02</b> 21:3 <b>sl03</b> 53:11 <b>sl04</b> 64:18 <b>sl05</b> 77:5 <b>sl06</b> 88:22 <b>sl09</b> 106:5 <b>sl1</b> 21:5 <b>sl10</b> 113:18 <b>sl11</b> 125:25 126:5 <b>sl12</b> 131:17,17 <b>sl15</b> 161:19 <b>sl16</b> 164:13 <b>sl17</b> 177:17 <b>sl19</b> 190:14 <b>sl20</b> 193:22 <b>sl21</b> 194:17 <b>sl22</b> 218:3 <b>sl23</b> 221:19 <b>sl25</b> 227:23 <b>sl5</b> 76:24 <b>slicer</b> 3:15 9:22,24 10:1 <b>slightly</b> 218:20 <b>sloppy</b> 125:14 <b>slow</b> 196:2	<b>slowing</b> 217:4 <b>slowly</b> 196:8 <b>small</b> 131:25 159:17 <b>smaller</b> 122:17 <b>smart</b> 184:2 <b>smith</b> 2:11 9:18,19 <b>smoke</b> 34:20 <b>sobering</b> 171:13 <b>soc</b> 105:3 112:17 114:20 115:7 124:17 <b>social</b> 132:14 <b>socially</b> 137:4 <b>societies</b> 143:22 <b>society</b> 5:17 6:24 7:2 30:12 31:1 97:13 103:12,13 105:7 106:6 143:21 164:16 167:19 170:17,21 171:15 172:6,20 172:22 173:11 175:22 176:8,24 177:18 179:11 180:23 183:20 186:2,7,17 187:8 187:11 235:8,17 237:20,24 <b>society's</b> 164:21 <b>sodium</b> 179:24 <b>sold</b> 63:25 <b>solely</b> 126:20 195:13 <b>solution</b> 74:11 138:14 <b>solutions</b> 9:9 245:1 248:1 <b>solved</b> 158:2 <b>somebody</b> 202:15 206:1 216:10	<b>somewhat</b> 57:3 151:23 <b>son</b> 202:3 <b>soneeya</b> 49:22 149:14 <b>sophistication</b> 119:12 <b>sorry</b> 15:5 17:8 20:19 29:24 32:8 41:11 42:16,17 48:15 62:23 63:7 66:18 69:12 71:12 75:24 77:21 79:7 84:5 93:1,5 97:10 100:15 104:21 113:25 120:12 125:12 127:10 130:4,17 132:10 149:22 150:10 161:10 163:15 164:9 171:11 173:25 177:7 178:1 181:6 184:10 185:17 186:12 190:21 193:13,21 196:4 199:17 201:20,20 204:20 206:4,4,5 214:19 217:4 221:23 228:2 230:21 238:13 241:12 <b>sort</b> 87:7 143:17 151:17 194:25 197:8 215:1 241:3 <b>sorts</b> 74:17 <b>sounds</b> 34:25 40:25 57:19 93:1 131:12 196:25 <b>source</b> 196:17 219:22,24	<b>sources</b> 195:18 <b>southern</b> 1:2 9:6 <b>speak</b> 17:1,14 57:22 80:24 128:5 161:5 191:3,7 242:14 <b>speaking</b> 11:6 27:10 37:7 63:23 80:9 88:10 102:9 109:10,10,11 115:24 172:16 <b>special</b> 5:7 64:15 81:8 <b>specialty</b> 147:1 <b>specific</b> 12:21 13:13 24:1 27:11 30:1 31:22 37:19 38:2 39:3 40:24 132:24 133:4 134:12,16 156:24 157:11 158:20 213:2 238:22 <b>specifically</b> 15:3,6 25:19 43:21 58:1 89:19,21 151:25 212:5 230:7,12 234:4 <b>specifics</b> 45:17 207:4 <b>spectrum</b> 58:2 97:17 <b>speed</b> 93:21 <b>spend</b> 55:8 101:22 120:9 137:15 <b>sphere</b> 153:15 <b>spills</b> 170:2 <b>spine</b> 166:6,10 <b>spoke</b> 51:22 76:14 76:18 120:4 202:1 <b>spoken</b> 76:19
--	--	--	--



<b>sponsored</b> 73:4 <b>sports</b> 50:10 179:21 <b>spot</b> 127:7 <b>spotlight</b> 54:12 <b>spur</b> 128:9 <b>ss</b> 244:4 <b>staff</b> 5:13 19:23 43:12 45:24 46:6 55:18,22 56:4,13 56:25 66:7,10,16 67:20 75:3,5,8,9 75:10,13 83:2 89:4 <b>stage</b> 95:18 <b>stalled</b> 52:1 <b>stamp</b> 64:9,10 97:3 113:10 <b>stamped</b> 64:18 <b>stand</b> 129:4 155:7 <b>standard</b> 120:18 121:5 205:2 <b>standards</b> 5:24 51:6 100:11 106:7 106:17 108:6 111:14 112:6 115:3 116:10,19 117:25 118:3,15 118:17,21 120:17 121:4,16 122:9 130:10 147:19 148:8 149:15 154:25 157:20 230:14 231:4,7,22 <b>standing</b> 196:21 <b>stands</b> 63:17 114:7 <b>start</b> 11:5 28:11 29:4 44:9 78:21 99:17 101:25 102:16 104:22 139:23 162:15	178:21 200:19 240:11 241:8 <b>started</b> 10:11 12:5 32:25,25 34:8 46:21 60:19 205:20,22 <b>starting</b> 81:18 112:13 165:17 167:24 173:5 178:20 199:5 <b>starts</b> 22:18 162:14 170:1,5 237:3 <b>state</b> 5:3 15:7 71:3 73:4,11,18 87:4 106:18 124:19 133:20,20 135:18 135:25 140:8 150:13 202:17 205:20 219:22 244:3 246:10 247:15 <b>state's</b> 135:20 <b>stated</b> 14:21 75:4 154:5 231:3 235:17 <b>statement</b> 5:17 91:21 97:13 99:21 117:14 126:7,11 129:17 199:3 232:2,7,11,12 234:4 246:13,14 247:19,19 <b>statements</b> 114:19 115:2 116:18 231:7 235:16 <b>states</b> 1:1 58:14 62:6 73:25 90:13 107:8 122:9,11,16 147:12 154:13 196:19,22	<b>statistically</b> 166:5 166:10 <b>status</b> 59:7 143:11 143:11,12 <b>statutory</b> 132:14 <b>stay</b> 43:24 <b>staying</b> 158:25 159:17 <b>steensma</b> 222:24 223:9 228:2 <b>step</b> 216:6 <b>stephen</b> 1:14 4:4 4:24 5:5,10 9:4 10:4 50:25 77:5 83:19 111:9 150:3 185:22 244:6 245:8 246:4,9 247:4,13 248:20 <b>steps</b> 208:3,7 <b>stereotypic</b> 102:13 <b>steroids</b> 166:2 <b>stigmatized</b> 100:1 <b>stood</b> 114:18 <b>stop</b> 31:11 32:9 33:7,20 162:7 201:4 <b>stopping</b> 157:8 <b>story</b> 206:4 <b>straightforward</b> 97:15 <b>street</b> 3:3,16 <b>strength</b> 168:6,7 168:16 178:23 179:9 183:10,11 183:25 239:8 <b>strengths</b> 130:25 <b>strict</b> 38:12 <b>strictly</b> 196:1 <b>strong</b> 168:8,17 169:13 170:11,13 171:20 173:13,23	173:24 174:2 180:4,4,4,17 181:2 181:9,12,17,22 183:12,21 186:3,5 186:15,23 187:6 195:1 236:9 238:23 239:9 <b>strongly</b> 72:14 180:23 <b>structure</b> 90:16 <b>struggle</b> 101:15,16 <b>struggles</b> 102:1 205:8 <b>struggling</b> 102:11 <b>student</b> 43:12 44:2 44:3 45:6 46:6 <b>students</b> 5:13 44:20 45:13 46:2 55:14 89:4,13,18 <b>studies</b> 5:16 38:3 38:21 55:16 109:5 124:2,2 128:10 130:23,23,24 131:1 143:9 151:25 152:8 160:12 163:7 166:4 172:11,12 173:10,10,11 174:21 221:5,22 222:1,7 223:8,10 223:11,13,19,24 224:4 228:16,21 236:3 241:14 <b>study</b> 7:22 26:4,18 26:24 27:3,20,22 28:13 29:23,24 30:3 109:20 114:7 115:12,15 116:20 117:15 119:5,13 119:21,23 120:17 121:3 130:25
--	---	--	--

[study - sweet]

Page 50

140:13 147:10 152:4,24 153:18 156:23 157:10 158:15,18,23 159:16 161:5,12 162:16,24 163:21 221:16 222:8,9,12 222:14 225:7 226:14 228:15 229:6,10 <b>study's</b> 162:1 <b>studying</b> 120:9 <b>styled</b> 116:22 <b>sub</b> 43:1 <b>subject</b> 95:6 102:7 138:16 197:6,6 <b>subjective</b> 96:13 151:14 184:23 185:6 <b>subjectively</b> 91:24 <b>submission</b> 36:9 <b>submit</b> 24:12 <b>submitted</b> 13:22 14:7,16 15:19 16:1 19:10 21:21 22:5 23:6,16 24:15,21 25:7 34:11,16,16 36:9 36:15 49:5 <b>submitting</b> 24:22 <b>subreddit</b> 160:5 <b>subscribed</b> 246:10 247:14 248:21 <b>subscribers</b> 35:17 <b>subsequent</b> 148:8 <b>subsequently</b> 6:19 161:21 233:24 <b>subsidizes</b> 210:10 211:18 <b>substance</b> 17:1 34:6	<b>substantial</b> 244:16 <b>substantially</b> 34:11 <b>substitute</b> 136:25 <b>subtleties</b> 176:19 <b>suddenly</b> 152:17 <b>suffer</b> 104:9,15 105:4 <b>sufficient</b> 43:23 45:18 165:9 <b>sugar</b> 179:21,22 179:23 182:3 <b>suggest</b> 12:15 94:16 168:19 183:14 238:11 239:5,11 <b>suggesting</b> 16:11 94:17 104:1 110:11 117:16 118:25 <b>suicide</b> 94:13 <b>suite</b> 2:6,14,22 3:16 56:14 245:2 <b>summarized</b> 45:4 166:1 <b>summarizing</b> 198:10 <b>summary</b> 40:21 59:24 132:4 135:23 <b>superior</b> 245:1 <b>supervise</b> 75:3,6,7 75:9 <b>supervised</b> 82:2 <b>supervision</b> 29:11 57:20 58:8 75:8 76:1,4 78:14 <b>supervisor</b> 29:3,9 <b>supervisory</b> 75:19 75:19 76:11	<b>supplemental</b> 114:14 117:5 <b>support</b> 6:14 14:4 87:1 94:23 128:19 130:13 143:9 145:13 152:4,24 153:19,20 156:6 157:7 158:22 161:2 179:19 192:12 235:4 <b>supportive</b> 241:22 <b>supports</b> 159:9 <b>supposed</b> 133:2 177:7 221:7 <b>sure</b> 12:17 13:25 17:9 42:19 46:11 48:25 52:3 56:3 62:3 65:11 66:3 67:17 80:21 100:15,17 104:16 104:25 116:23 118:22 121:19 132:1 136:11 149:7 150:22 169:8 170:18 171:16 172:25 174:9 175:13 179:6 180:5 203:15 240:18 <b>surgeon</b> 66:12 70:9 72:18,21 93:16 124:24 129:1 <b>surgeons</b> 66:4,6,7 66:16 128:10 <b>surgeries</b> 84:20 94:5 96:14 130:12 132:7 135:2,3,10 135:21 211:2,3,19 212:19 213:3,19	<b>surgery</b> 6:10 13:14,16 14:13,22 15:1,2 80:16,20 81:3,7 84:7,9 86:7 86:8 89:18 92:19 92:19 94:6 127:20 131:23 132:13,21 132:22 134:9,10 135:6 147:3 157:9 162:5 188:19 211:24 212:5,7,14 212:16 213:6,12 233:18 237:25 <b>surgical</b> 6:18 13:9 14:15 85:6,11,19 86:13 91:18,22,25 91:25 92:14 93:9 94:23 95:1 123:8 125:2 133:10 137:20 139:17 161:21 162:3,17 205:3 211:7 214:11 215:25 233:23 <b>surgically</b> 137:4 <b>surprised</b> 212:13 214:15 <b>surprising</b> 105:6 <b>survey</b> 6:15,20 156:6 157:2 161:22 233:24 <b>sustain</b> 127:9 <b>swear</b> 10:3 <b>sweden</b> 100:10 105:11 122:2 123:2 124:4 154:8 188:7 208:19,21 <b>swedish</b> 7:5 188:21 190:19 <b>sweet</b> 182:4,4
---	---	---	---

[sweetened - testified]

Page 51

<b>sweetened</b> 179:21	227:14 228:11	145:25 151:19,20	144:14 146:19
<b>sworn</b> 10:5 244:7	230:17 231:20	160:5 173:16	200:3 207:15
246:10,13 247:14	242:19	186:3 187:21	<b>teens</b> 129:8
247:18 248:21	<b>taken</b> 9:4 11:21	192:21 203:7	<b>television</b> 126:21
<b>synonymous</b> 59:3	12:5 18:8,24	212:25 234:17,24	<b>tell</b> 16:2 19:16
<b>synthesis</b> 37:12	50:23 83:17 102:6	<b>talks</b> 159:21 214:9	30:15 35:9 43:9
<b>synthesize</b> 40:24	106:1 111:5 112:1	239:2	46:10 52:24 66:14
<b>synthesizing</b> 37:9	124:25 126:16	<b>tara</b> 2:4 9:16	78:18 79:1,4,10
<b>synthetic</b> 37:20	129:21 145:15	<b>tartof</b> 16:21,21	117:1 129:15
<b>syrup</b> 179:23	150:1 185:20	<b>task</b> 169:12	137:12 138:24
<b>system</b> 35:18,18	190:10 220:16	170:11 173:25	146:8 200:15
35:24 182:8,9,21	225:22 229:20	182:16 183:7,8	207:8 213:8 219:1
<b>systematic</b> 6:3	<b>takes</b> 221:13	184:11,24 185:11	219:7 222:25
39:1,4,7,11,24	<b>talk</b> 39:17,22	<b>tborelli</b> 2:9	231:1 239:6,24
40:8,13,16,19,21	44:12 54:18 58:23	<b>teach</b> 55:2	244:7
41:3,5,18 106:22	71:3 95:5 101:16	<b>teacher</b> 57:18	<b>telling</b> 16:25 33:15
112:16 113:2,20	109:24 110:13,15	<b>teachers</b> 45:12,12	176:6 201:3
115:25 141:13,15	115:9 144:24	57:14,15	<b>tells</b> 102:20 146:23
141:18,21 165:2	160:9 199:11,17	<b>teaching</b> 57:5,7,11	<b>ten</b> 62:21 119:23
165:14 166:15	199:21,22 200:9	57:16,17,19,20,20	120:8 229:6
167:9 188:8,10	200:11 209:24	57:21 58:8	<b>tendency</b> 244:16
193:4	221:2	<b>team</b> 38:9 52:18	<b>tens</b> 211:4
<b>systematically</b>	<b>talked</b> 43:14 44:20	52:18 84:20 236:7	<b>term</b> 12:16 14:23
39:15 40:23	44:23 108:9 109:9	<b>teams</b> 50:10	31:3 39:25 40:6
<b>systemic</b> 26:19	140:13 145:2,3,4	<b>technically</b> 63:23	60:11 63:16 88:4
<b>systems</b> 122:20	147:20 193:3	<b>technician</b> 9:1	93:24 98:2 103:4
<b>t</b>	198:4 199:8,9	10:2 18:6,10,22,25	124:3 127:5 128:1
<b>table</b> 114:14 117:5	200:10 202:24	20:16,20 50:21,24	137:20 138:22
179:23 218:15	203:16 204:7	54:11 83:15,18	143:8 145:11
228:17,21	<b>talking</b> 12:11 13:5	105:24 106:2	173:2,3,11 174:21
<b>take</b> 11:10 12:6	13:7 29:16 31:3	111:3,8,24 112:2	197:10 223:11
45:12 48:7 57:7	42:4 46:22 51:4	149:24 150:2	<b>terminology</b> 12:13
60:23 62:20,21	54:1 62:24 80:14	185:18,21 190:8	<b>terms</b> 12:15 38:13
63:11 65:14 83:8	96:2 101:25	190:11 220:14,17	45:4 52:4 168:6,7
88:24 94:22	104:18 110:18	225:20,23 229:18	168:16 173:7
119:19 122:11	111:14 112:5	229:21 242:22,25	175:8 178:23
137:11 139:24	120:7,14 121:25	<b>techniques</b> 127:20	183:11 228:22
147:2 155:19	131:1,23 134:3	<b>technology</b> 188:20	239:8
169:22 185:14	135:8,9,16,17,17	<b>teenager</b> 29:19	<b>testified</b> 10:5
192:17 204:6	137:15 138:1	<b>teenagers</b> 64:3	49:17 51:5 63:8
220:10 224:11	141:11 143:4	79:9,10 86:8	67:20 68:18,22

[testified - time]

Page 52

69:3 80:9 136:8 143:6 148:6,19 149:13 197:25 201:6 203:20 204:15,19,21 205:4 209:5 <b>testify</b> 10:16 87:4 118:6 <b>testimonies</b> 176:23 <b>testimony</b> 11:19 12:7 13:23 14:7 14:16 47:17,18,22 48:10,17,22,25 49:5,24,25 50:13 50:13,16 78:3,5 86:25 87:15,16 198:13 204:8 218:10,11,22 244:8,9 246:6,7 247:6,9,12 <b>texas</b> 2:15 <b>text</b> 117:25 120:9 131:21,25 156:13 <b>thank</b> 16:25 21:14 38:25 40:20 41:24 46:21 52:16 53:1 56:22 57:5 59:24 61:1 64:5 65:20 72:12 73:2 79:16 82:3 84:22 85:5 85:25 90:7 97:2 119:15 122:24 129:16 139:14 147:18 148:1 149:13 163:25 175:18 187:25 196:6 207:22 209:4 220:12 222:1 223:6 227:20 231:23 235:6 242:21	<b>thanks</b> 10:7 20:20 20:21 134:6 169:8 <b>theemploymentl...</b> 3:6 <b>theoretical</b> 65:25 66:2 <b>theoretically</b> 71:9 <b>therapist</b> 92:24 202:7 203:8 <b>therapists</b> 93:14 109:1 203:8 <b>therapy</b> 15:2 22:21 37:2 89:17 93:22,22 157:9 166:8,12 <b>thing</b> 34:13 79:15 103:4 152:23 159:9 160:2 176:8 184:3 187:14 190:3 198:7 199:14 203:9 209:16 <b>things</b> 13:2 22:3 24:16 25:17 28:8 39:16 58:9 109:25 110:24 133:23 141:24 153:16 154:7 166:20 172:24 173:8,9 175:25 181:13 210:23 232:13 <b>think</b> 11:20 12:2 14:1 16:1,20,21 17:8 20:14 23:3 24:14,15,15,25,25 27:9 30:23,24 34:17 37:12,13 38:11 39:17 41:6 45:18 46:8,15 47:3,12,23,24 48:14,16 49:2,13	52:1,1,4,14,17,24 54:6 57:13 58:6 58:18,22 59:22 61:20 67:7 68:19 68:23,24 71:9,12 72:22,24 74:2,6,8 76:19,25 79:9 80:8,23 81:9,10 84:11 85:2 86:22 86:23 87:11 88:1 88:5 90:6 92:16 95:23 96:8 98:5 102:24,25 104:10 104:12 107:11 108:22 109:13 110:14 118:21 119:25 130:16,22 130:24 133:12,14 133:19 135:11,13 135:19 136:21 137:7,17,24 138:13 139:4 143:10 148:14,15 148:25 149:6,13 153:16 154:3,4,23 154:25 155:4 159:3 160:24 163:8 164:4 166:20,23 167:3 167:12 169:22 172:3,5,5,16,20 173:14 176:16 180:7 181:4 185:7 191:13 193:11 194:12 198:9,14 198:16 199:12 201:10 202:14,19 203:2 204:20,21 208:21 211:14 212:1 213:15 214:6 216:1,1,18	217:16 221:6,10 229:1 232:10,23 234:12,21 237:14 238:23 239:23 240:10,16 242:20 <b>thinking</b> 34:20 81:4,18 <b>thinks</b> 92:17 215:25 <b>third</b> 33:4 99:13 107:25 108:19 116:17 228:12 <b>thirty</b> 245:18 <b>thomas</b> 228:1 <b>thought</b> 69:21 70:3 81:3 157:25 171:8 175:20 <b>thoughtful</b> 94:7 <b>thousands</b> 211:4 219:13 <b>three</b> 20:2 35:15 36:4,4,6,10 43:15 79:14 84:17,18 137:11 148:14 168:24 169:2 195:7 202:19,22 203:8 236:21 237:9 <b>thursdays</b> 56:21 <b>tightening</b> 108:4,6 <b>tilt</b> 20:17 <b>time</b> 1:19 9:2 23:24 25:6 34:8 41:22 43:24 45:21 54:22,22 55:8,11 56:9,18 57:2,6 58:16 59:6 68:8 70:21 79:13 84:6 101:22 102:6 128:3,16 132:6 134:4 136:14,25
---	--	---	---

[time - treatment]

Page 53

137:15 157:25 158:17 161:4,6 189:9,12 197:23 202:12 204:16,17 211:11 216:3,3 217:21 221:13 <b>timeline</b> 31:18 33:14 34:24 <b>times</b> 10:12,19 29:17 39:11 98:15 120:3 189:9 197:22 <b>tissue</b> 81:2 <b>title</b> 16:18,23 22:20 64:15 67:18 89:12 97:23 101:7 101:8 179:15 188:18 194:2 <b>titled</b> 233:22 <b>today</b> 9:10 10:14 10:23 11:19 12:5 12:8,10,17 13:3 15:10,23,24 16:3 17:3 21:25 31:2 50:7,25 72:11 75:1 76:9 77:8 83:19 100:25 111:9 123:11 131:6 135:3 141:21 143:6 145:5 150:3 153:10 160:12 185:22 197:22 201:25 203:16,20 204:8 242:1,4,4,15 <b>toggle</b> 125:24 <b>told</b> 46:15 60:7 78:16 79:5 108:17 108:18 109:9 149:15 198:7 200:20 201:1,1,1	202:3,20 <b>tolerated</b> 125:3 <b>tone</b> 126:16 <b>tool</b> 115:20,25 <b>tools</b> 112:18 <b>top</b> 62:4 78:18 79:23 125:14 150:12 156:21 165:22 183:4 199:6 235:12 238:6 <b>topic</b> 114:16 <b>toronto</b> 226:10 <b>total</b> 47:21 94:23 114:24 166:6 218:15,17 227:9 <b>totally</b> 242:10 <b>tr</b> 240:4 <b>track</b> 79:15 <b>tracked</b> 127:14 <b>tradition</b> 31:24 <b>traditional</b> 35:13 36:1 55:3 57:8 <b>trails</b> 181:18 <b>training</b> 55:24 <b>trans</b> 6:2 28:8,9 38:4 39:5 45:1 50:9,16 64:3,4,4 81:12,13 83:5 91:15 101:20 103:13,23 104:5,8 104:14 113:1,20 115:18 116:3 120:24 125:14 126:17 127:2,2,16 129:11,11 135:6 143:13,14 144:2,6 147:2 151:1,1,16 154:12 197:21,22 200:3 202:5,22,23 205:14,15,17	208:1 215:8,12,21 215:24 <b>transcribe</b> 10:23 <b>transcribed</b> 244:8 246:7 <b>transcript</b> 7:16 8:4,5 53:15 83:24 198:13 218:4,4 245:11,12 246:5 246:12 247:5,11 247:17 <b>transgender</b> 5:21 7:18 12:24 22:19 22:23 26:8 27:3,5 27:14,22 38:1 43:2,13,15 44:17 48:18 58:1 69:13 89:4,13,14 99:15 99:16,24 100:1 101:9,12 102:8,10 102:17,18,21,22 103:3,10,10 116:10 124:23 127:25 128:15 134:23 135:21 146:5,9,25 152:18 154:11,14 159:24 159:25 166:3,4,9 207:19 213:10,21 216:20 217:2,6 221:20 228:8 231:20 <b>transgenderism</b> 37:18 <b>transition</b> 6:18 106:23,25 129:8 137:3 146:4 155:11 157:15 158:10 159:12 160:21 161:21 162:4,6,17,19	207:11,24 208:3 233:24 <b>transitioned</b> 137:22 <b>transitioning</b> 204:22 <b>translates</b> 165:4 <b>translation</b> 190:20 191:9,12,12 <b>transsex</b> 146:4 <b>transsexual</b> 103:18,19,20 138:13 147:10 <b>transsexualism</b> 27:1 <b>treat</b> 28:23 212:12 <b>treated</b> 6:17 16:13 29:6,6 143:21 161:20 233:22 <b>treating</b> 69:9,19 70:2 135:10 <b>treatment</b> 6:22 7:1 12:25 13:7 14:10 14:11,24 22:19,23 26:8,11,11 27:20 27:22 28:14 29:8 29:23,25 30:5,9 45:1,10 51:10,11 51:15,24 52:18 55:17 69:5,6,11,21 70:3,15,18 73:9,11 73:22 78:12 79:24 80:1,1,3,4,6 81:23 82:1 85:19 99:19 99:22 101:21 105:8 106:20 108:2,10 118:4,4 121:17 125:2 128:12 139:11 143:23 146:11 148:16 157:9
--	---	--	--



[treatment - unfortunately]

Page 54

164:7,14 173:6 177:18 186:8,18 187:9,10 191:22 200:17,22 202:21 208:17,23 209:25 211:7,24 212:11 213:2,20,21 215:25 216:1,7 235:25 236:8 <b>treatments</b> 45:4 105:9 139:17 215:16 236:3 <b>trial</b> 47:18 49:17 49:21,25 149:14 <b>trials</b> 123:4 <b>trickles</b> 45:11 <b>tried</b> 51:14 <b>trouble</b> 105:18 168:11 189:22 205:16 <b>true</b> 24:7 67:25 68:2 79:7 91:21 117:1 139:13 140:7 146:14 147:22 153:5 155:4 157:17 163:20 197:17 244:9 <b>trust</b> 44:7 45:5,14 98:12 117:1 179:7 180:20 229:14 <b>trusted</b> 138:17 <b>trusting</b> 45:14 <b>truth</b> 241:13 244:7 <b>truthful</b> 11:18 <b>truthfully</b> 10:17 <b>try</b> 10:13 11:3,5 13:10 42:9,9 64:25 189:7 200:14 217:24	<b>trying</b> 14:22 33:18 33:21 63:7 95:25 96:6 109:4 118:21 118:22 125:9 131:15,16 136:23 138:10 143:25 144:1 153:13 158:11 167:3,10 170:22 171:22 183:17 185:1 202:14 241:2 <b>tuesdays</b> 56:20 <b>turco</b> 49:23 <b>turn</b> 11:4 112:7,7 155:8,19 189:2 223:6 <b>turned</b> 205:10,12 <b>turning</b> 89:20 <b>two</b> 19:25 40:7,18 42:24 49:24 55:13 75:7,12 79:9,14 82:14 84:16,18 101:2 107:13 109:11 110:6 118:8 140:9 148:14,17 160:12 162:9 163:7 165:2 166:15 167:8 168:25 169:1 172:19 180:7,7,14 180:16,17 181:4,4 183:23 187:16 195:7 200:19 205:18 226:14,17 234:9,11,13 238:19,19,20 239:2,7,14 240:5 <b>type</b> 133:17,18 <b>types</b> 12:12 213:3 <b>typically</b> 56:25	<b>typo</b> 167:10,13,13 <b>u</b> <b>u</b> 63:13 <b>u.s.</b> 9:6 26:17 <b>uk</b> 100:10 105:11 122:2 140:10 141:14 154:9 160:13 191:20,25 192:6 195:4 196:24 <b>ultimate</b> 210:21 <b>ultimately</b> 59:23 <b>unable</b> 242:11 <b>unavailable</b> 7:5 <b>unaware</b> 47:25 <b>uncertain</b> 79:3 <b>uncertainty</b> 231:20 <b>unclear</b> 107:2 116:8 <b>unconvincing</b> 188:11 <b>undergo</b> 162:3,17 208:9 215:13,22 216:2 <b>undergoing</b> 214:10 <b>undergraduate</b> 55:2 57:9 <b>understand</b> 10:14 11:14 12:7 13:21 23:5 25:13 29:20 37:21,22 39:2,24 40:1,5,6,7 45:9 46:1 53:15 56:3 57:23 58:7 63:7 71:2 72:8,9,17 73:5 75:18 79:16 82:18,18 86:18,23 91:5,5 92:9 95:25 96:7,8,9,10 109:4	117:9 118:8 119:1 129:20,22,24 131:3,14 133:7 135:19 136:19 137:7,13,16,25 138:10 139:5 144:19,19 145:19 151:18,23 153:11 153:13,17 158:4 158:12 159:7 166:15 169:6 171:9 177:1,1 180:9 183:20 185:1,10,13 187:15 198:12 204:24 206:21 208:8 209:3,4 224:1 234:22 <b>understanding</b> 12:14 14:9,10,20 14:25 40:18 54:15 55:3 63:16 67:16 71:13 87:3 93:2 93:23 110:2 116:4 119:24 131:6,7 135:5 175:24 180:5 203:17 224:3 226:25 229:9 231:6 <b>understands</b> 153:4 <b>understood</b> 13:25 14:2 15:3 60:9 69:10,21 70:2 88:8 154:5 202:5 <b>undue</b> 128:18 <b>unethical</b> 215:17 <b>unfamiliar</b> 221:4 <b>unfit</b> 112:18 <b>unfolded</b> 34:4 <b>unfortunately</b> 54:6,12 153:17
---	---	---	--

[unfortunately - wait]

Page 55

242:1 <b>unique</b> 81:9 <b>unit</b> 9:3 46:20 <b>united</b> 1:1 122:9 122:11,16 154:13 196:19,22 <b>universal</b> 123:14 123:19 124:7 <b>universe</b> 137:10 139:3 204:24 <b>university</b> 16:10 16:10 44:18 46:2 54:20,23 59:13 60:4,5,7,14,18,20 61:2,16 68:10,12 89:3,15 <b>university's</b> 59:6 <b>unknown</b> 62:21 <b>unnoticed</b> 95:12 <b>unpublished</b> 222:22 <b>unrelated</b> 91:6 <b>untrustworthy</b> 140:11 <b>unusual</b> 34:13 <b>unwavering</b> 128:2 <b>unwelcome</b> 146:8 <b>upcoming</b> 105:2 <b>updated</b> 21:25 <b>upper</b> 77:14 98:18 98:21 162:11 167:21 178:2 <b>urban</b> 144:25 <b>urge</b> 107:1 <b>urologic</b> 66:12 <b>use</b> 12:13 17:22 31:3 38:11 39:25 60:6 68:20 69:14 69:16 72:1 81:20 100:6 105:5,9 119:8,25 123:1	126:18,23 146:24 149:9 161:1 165:3 168:17,19 183:12 183:13,21 193:18 206:25 208:5 219:1 239:9,11 <b>useful</b> 32:7 <b>user</b> 195:23 <b>uses</b> 40:22 136:22	<b>vast</b> 208:11 <b>venue</b> 128:3 199:20 <b>verbal</b> 10:24 <b>verbally</b> 85:16 <b>verge</b> 70:24 <b>verification</b> 45:3 234:20,20 <b>veritext</b> 1:20 9:9 9:11 245:1,7 248:1 <b>veritext.com.</b> 245:17 <b>version</b> 23:1,2 24:3 35:1 36:15 51:7 105:3 114:20 115:7 116:11,19 147:19,23 148:14 148:20,21,23 <b>versions</b> 148:8,9 <b>versus</b> 9:5 22:8 49:4,10,14,22 50:4 50:9 143:5 173:23 210:9 240:24 <b>video</b> 9:1,3 10:2 18:6,10,22,25 20:16,20 50:21,24 54:11 83:15,18 105:24 106:2 111:3,8,24 112:2 149:24 150:2 185:18,21 190:8 190:11 220:14,17 225:20,23 229:18 229:21 242:22,25 <b>videoconference</b> 1:20,24 2:3 3:11 3:24 <b>videographer</b> 3:23 9:10	<b>videotaped</b> 1:14 244:6 <b>view</b> 21:17 54:8 63:11 67:7 86:25 91:17 92:10 94:22 102:21 111:19 136:12 173:4 175:24 207:13 <b>views</b> 46:12 109:3 195:12,15 <b>virginia</b> 1:2 3:4,9 3:16,17 5:3 9:7 14:6,12 22:9 50:9 85:7,20 86:3,12 133:15,16 134:17 134:21 135:4 210:3,9,11,14 211:8,19,23 212:1 212:6,9,14,15 213:6,9 214:13,21 217:3,7,11,14 218:14 <b>virginia's</b> 133:8 <b>virtual</b> 1:20 45:22 56:11,13 110:24 <b>virtually</b> 110:20 <b>visible</b> 88:17 177:10 <b>visit</b> 55:10 63:10 81:21 109:12 <b>visitor</b> 195:23 <b>vitae</b> 5:1 <b>volume</b> 5:5 <b>vs</b> 1:8 5:3,9 7:15 51:23 77:6
	<b>v</b> <b>v</b> 48:11,24 223:15 239:22 240:1,4,13 240:24 245:6 246:3 247:3 <b>vaginoplasty</b> 127:21 <b>vaguely</b> 85:11 <b>validity</b> 118:20 <b>values</b> 166:7,11 169:16 170:16,24 174:5,12 175:1,1,7 <b>vandenbussche</b> 156:7 <b>vanderbussche</b> 155:17,20 156:5,8 <b>vantage</b> 153:14 208:4 <b>variable</b> 5:15 97:8 97:19 <b>variables</b> 92:5 <b>variations</b> 90:16 103:14 <b>varies</b> 75:10 <b>variety</b> 28:20 67:21 <b>various</b> 12:12 26:4 45:12 47:16 67:20 89:3 93:22 116:1 118:20 120:3 175:24 187:1 227:7		<b>w</b> <b>w5</b> 114:14 117:6 <b>wait</b> 11:3,5 23:11 104:24 122:22 130:4 146:2 162:6 162:8 169:24

[waiting - wpath]

Page 56

<b>waiting</b> 177:9	<b>watch</b> 57:21	<b>west</b> 1:2 2:6,22 3:4	<b>women</b> 151:3
<b>waived</b> 245:19	<b>watching</b> 147:9	3:9,17 5:3 9:7	<b>wondering</b> 56:23
<b>walk</b> 31:18	<b>water</b> 48:7	14:6,12 22:9 50:9	57:1 171:1
<b>wallien</b> 222:21	<b>waves</b> 226:17	85:7,20 86:3,12	<b>word</b> 31:20 32:12
<b>walt</b> 3:1	<b>way</b> 29:10 32:11	133:7,14,16	38:11 62:11 67:14
<b>want</b> 10:11 12:11	35:14,22 38:12	134:17,21 135:4	69:14,16 72:1
12:12,17 23:24	39:25 52:2 53:25	210:3,9,10,14	90:21 98:7,14
47:15,16 66:13	57:8 67:15 73:3	211:8,19,23 212:1	117:11 119:3,16
69:22 70:5,17,19	73:10 94:16	212:6,9,13,15	119:25 121:11
70:25 71:1,23	102:24 136:11	213:5,9 214:13,20	136:18 138:23
72:14,22,23 74:20	137:4,9 139:8	217:2,6,11,14	148:15,15 165:20
88:2 92:9 93:10	141:23 142:24	218:14	165:20
94:8 99:3 101:20	145:23 209:17	<b>western</b> 5:12 28:4	<b>words</b> 90:22 119:3
103:2 114:8	224:1,10 233:2	54:19 57:7,25	138:12 146:25
135:21 136:17	<b>ways</b> 40:7	58:4 59:12,15	170:17 171:22
137:15 163:15,16	<b>we've</b> 83:7 203:16	60:2,10 89:2,15	175:4,14
169:8 175:10	225:6	<b>whistle</b> 125:14	<b>work</b> 30:7,20 34:4
179:6 180:19,19	<b>weak</b> 168:18	<b>wide</b> 28:17 97:17	37:19 38:17 57:25
187:12 193:15	169:15 170:10,14	<b>william</b> 1:9 3:8 9:5	59:9 60:16 63:19
194:24 196:7	170:23 171:6,21	245:6 246:3 247:3	72:15 148:9
198:13 206:3,6,8	173:23 174:4,7,11	<b>willing</b> 127:17	203:19,23 208:18
208:16,18 209:3	174:14 180:17	<b>window</b> 76:25	<b>worked</b> 38:10
212:9 213:15,15	183:13 239:10,14	168:13	70:21
213:16,17 216:4,4	<b>wealthy</b> 68:25	<b>windows</b> 54:8	<b>working</b> 51:24
216:5,5,8 219:1	74:23,24	<b>winter</b> 79:5	54:2 57:6 71:19
221:10 223:7	<b>weaponize</b> 128:14	<b>wish</b> 73:9 155:12	139:1
236:11	<b>web</b> 140:15 188:22	157:16 158:11	<b>works</b> 87:9,10
<b>wanted</b> 70:8 73:15	<b>website</b> 65:8 89:3	159:12 184:17	142:21 210:3
78:2 87:4 100:17	126:7,11 195:23	<b>witness</b> 4:4 10:3	<b>workshop</b> 43:11
104:15 131:25	<b>websites</b> 115:21	13:19 20:19 21:13	44:2,6 45:17,19,23
149:3 151:3,4,9	<b>wednesday</b> 17:6	47:15 53:10 54:12	46:7,18,22
195:6 200:8	201:25	65:2 99:21 166:25	<b>workshops</b> 55:5
226:20 228:10	<b>week</b> 17:5,7 55:14	220:21 242:21	<b>world</b> 99:23 109:2
232:10	56:21 79:7,9	244:7,9,17,18	116:9 151:3
<b>wanting</b> 176:17	<b>weighing</b> 128:12	245:8,11 246:1,4	211:13
<b>wants</b> 35:12 70:20	<b>weight</b> 173:8	246:11 247:1,4,15	<b>world's</b> 145:16
92:17 134:23	<b>wellness</b> 44:17	<b>witness'</b> 245:14	<b>worried</b> 203:4
153:20	<b>went</b> 20:1 189:7	<b>wives</b> 149:5	<b>worries</b> 20:21
<b>washington</b> 16:10	202:4 205:14	<b>woman</b> 91:17 92:1	<b>worse</b> 126:18
244:4,24	219:6	92:12,18,21 93:5	<b>wpath</b> 5:23 51:6
		94:4 124:24 200:1	105:7 106:7,17

[wpath - zuger]

Page 57

108:5,7 111:14 112:6,17 114:20 115:7 116:18 117:15,17 118:3 118:11,25 119:4,8 119:18,20 124:17 124:23,25 125:1,9 128:5,19 130:10 136:10 139:9 140:1,4,6 143:5 147:13,13 149:16 150:13 154:23 159:22 160:7,20 176:24 230:14 231:3 232:20 <b>wpath's</b> 44:24 99:13 118:7,8 120:23 140:10 157:20 <b>write</b> 20:9 32:21 33:1,11 38:16 65:10 70:14 90:13 139:16 149:15 205:11 <b>writer</b> 120:23 <b>writers</b> 120:23 <b>writing</b> 19:13 32:25,25 34:1,2,8 34:9,10,13,23,25 40:14 51:4 154:22 225:6 <b>writings</b> 32:6 <b>written</b> 32:3 72:15 84:8,19 85:3 143:1,2 159:10 <b>wrong</b> 83:6 92:21 128:3,3 136:18 142:7 155:4,5 160:14 183:16,18 190:21	<b>wrote</b> 25:6 60:7 70:17 81:10 84:6 127:11 149:8 159:11,11 165:1 170:5 171:2 199:12 205:6 206:19 <b>x</b> <b>x</b> 208:3 <b>y</b> <b>y</b> 208:3 <b>yeah</b> 17:13 24:7 31:15 35:3 42:2 42:11 49:9 52:17 54:14 57:24 62:5 62:21 66:20 74:15 78:25 82:4 87:3 87:25 140:16,16 140:18,25 142:5 142:10,23 148:13 148:25 153:24 167:23 170:7,8 171:7,19 177:12 178:1,19 179:2 181:7 184:9 186:14 192:16 193:1,19,24 201:18,19,19 207:20 209:23 210:17,18 214:25 221:25 223:22 224:5,19 229:5,7,7 229:8,18 <b>year</b> 5:23 22:22 32:24 33:25,25 34:18 35:8 43:14 44:4 46:24 75:14 76:15 77:9 78:1,2 78:16,17,22 80:25 81:19 82:4,7,8,24	86:10 105:16 106:7,13,16 109:13,13 177:23 198:6 199:11 202:22 203:10 205:9,24 210:1 225:12,13 226:11 226:12 228:23 <b>years</b> 29:7,16,18 29:20 35:15,15 42:20,24 67:10 78:13 80:10,11,14 80:23 81:10 100:4 103:5,5,12,15 139:25 148:14,15 151:10 160:10 172:7 213:10,11 217:9 223:2 225:11,13 236:4,6 241:7 <b>yep</b> 20:19 111:24 125:17 217:25 227:13 <b>yesterday</b> 39:11 56:10,17,24 <b>york</b> 75:15 <b>young</b> 22:24 33:3 33:6 88:7 155:11 157:15 158:10 159:12,25 186:21 206:5,6 242:5,9 <b>younger</b> 123:25 <b>youth</b> 22:19 106:21 107:9 108:2 122:7 188:9 215:8 223:25 226:8 <b>z</b> <b>zero</b> 76:15 78:2 114:25	<b>zilles</b> 1:24 9:11 244:24 <b>zoom</b> 17:25 46:14 131:21 156:14 193:18 198:3 244:6 <b>zucker</b> 152:10 <b>zuger</b> 222:12
--	---	--	---

Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.



VERITEXT LEGAL SOLUTIONS  
COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted fashion to authenticated parties who are permitted to access the material. Our data is hosted in a Tier 4 SSAE 16 certified facility.

Veritext Legal Solutions complies with all federal and State regulations with respect to the provision of court reporting services, and maintains its neutrality and independence regardless of relationship or the financial outcome of any litigation. Veritext requires adherence to the foregoing professional and ethical standards from all of its subcontractors in their independent contractor agreements.

Inquiries about Veritext Legal Solutions' confidentiality and security policies and practices should be directed to Veritext's Client Services Associates indicated on the cover of this document or at [www.veritext.com](http://www.veritext.com).

<b>Exhibit</b> <b>SL 02</b>
--------------------------------

Curriculum Vita  
**Stephen B. Levine, M.D.**

**Introduction:**

Dr. Stephen B. Levine is Clinical Professor of Psychiatry at Case Western Reserve University School of Medicine. He is the solo author of four books, Sex Is Not Simple in 1989 (translated to German in 1992 and reissued in English in 1997 as Solving Common Sexual Problems); Sexual Life: A Clinician's Guide in 1992; Sexuality in Midlife in 1998 and Demystifying Love: Plain Talk For the Mental Health Professional in 2006; Barriers to Loving: A Clinician's Perspective in October 2013. He is the Senior Editor of the first (2003), second (2010) and third (2016) editions of the Handbook of Clinical Sexuality for Mental Health Professionals. He has been teaching, providing clinical care, and writing since 1973 and has generated original research, invited papers, commentaries, chapters, and book reviews. He has served as a journal manuscript and book prospectus reviewer for many years. From 1993 to 2017, he was co-director of the Center for Marital and Sexual Health/Levine, Risen & Associates, Inc. in Beachwood, Ohio. He and two colleagues received a lifetime achievement Masters and Johnson's Award from the Society for Sex Therapy and Research in March 2005.

**Current Private Practice & Clinical Consultation:**

DeBalzo, Elgudin, Levine, Risen LLC  
 23425 Commerce Park, Beachwood, Ohio 44122-5402  
 Phone: 216-831-2900 x 13  
 Fax: 216-831-4306  
 Email: [s.levine@delrlc.com](mailto:s.levine@delrlc.com)

**Education:**

- 1963 BA Washington and Jefferson College
- 1967 MD Case Western Reserve University School of Medicine
- 1967-68 internship in Internal Medicine University Hospitals of Cleveland
- 1968-70 Research associate, National Institute of Arthritis and Metabolic Diseases, Epidemiology Field Studies Unit, Phoenix, Arizona, United States Public Health Service
- 1970-73 Psychiatric Residency, University Hospitals of Cleveland
- 1976 Board Certification American Board of Neurology and Psychiatry
- 1974-77 Robert Wood Johnson Foundation Clinical Scholar

**Appointments at Case Western Reserve University, School of Medicine:**

- 1973- Assistant Professor of Psychiatry
- 1979-Associate Professor
- 1982-Tenure
- 1985-Full Professor

- 1993-Clinical Professor

**Honors:**

- Summa Cum Laude, Washington & Jefferson
- Teaching Excellence Award-1990 and 2010 (residency program)
- Visiting Professorships
  - Stanford University-Pfizer Professorship program (3 days)–1995
  - St. Elizabeth’s Hospital, Washington, DC –1998
  - St. Elizabeth’s Hospital, Washington, DC--2002
- Named to America’s Top Doctors consecutively since 2001
- Invitations to present various Grand Rounds at Departments of Psychiatry, Continuing Education Lectures and Workshops
- Masters and Johnson Lifetime Achievement Award from the Society of Sex Therapy and Research, April 2005 along with Candace Risen and Stanley Althof
- 2006 SSTAR Book Award for The Handbook of Clinical Sexuality for Mental Health Professionals: Exceptional Merit

**Professional Societies:**

- 1971- American Psychiatric Association; fellow
- 2005-American Psychiatric Association- **Distinguished Life Fellow**
- 1973- Cleveland Psychiatric Society
- 1973-Cleveland Medical Library Association
  - 1985-Life Fellow
  - 2003-Distinguished Life Fellow
- 1974-Society for Sex Therapy and Research
  - President 1987-89
- 1983- International Academy of Sex Research
- 1983- Harry Benjamin International Gender Dysphoria Association
  - 1997-98 Chairman, Standards of Care Committee
- 1994- 1999 Society for Scientific Study of Sex

**Community Boards:**

- 1999-2002 Case Western Reserve University Medical Alumni Association
- 1996-2001 Bellefaire Jewish Children’s Bureau
- 1999-2001 Physicians’ Advisory Committee, The Gathering Place (cancer rehabilitation)

**Editorial Boards:**

- 1978-80 Book Review Editor Journal Sex and Marital Therapy
- Manuscript Reviewer for:
  - Archives of Sexual Behavior
  - Annals of Internal Medicine
  - British Journal of Obstetrics and Gynecology

- JAMA
- Diabetes Care
- American Journal of Psychiatry
- Maturitas
- Psychosomatic Medicine
- Sexuality and Disability
- Journal of Nervous and Mental Diseases
- Journal of Neuropsychiatry and Clinical Neurosciences
- Neurology
- Journal Sex and Marital Therapy
- Journal Sex Education and Therapy
- Social Behavior and Personality: an international journal (New Zealand)
- International Journal of Psychoanalysis
- International Journal of Transgenderism
- Journal of Urology
- Journal of Sexual Medicine
- Current Psychiatry
- International Journal of Impotence Research
- Prospectus Reviewer for:
  - Guilford
  - Oxford University Press
  - Brunner/Routledge
  - Routledge

**Expert Witness Appearances:**

- US District Court, Judge Mark L. Wolf's witness in Michelle Kosilek vs. Massachusetts Dept of Corrections et al. case (transsexual issue) in Boston 2007
- Deposition in the Battista vs. Massachusetts Dept of Corrections case (transsexual issue) in Cleveland October 2009
- Witness for Massachusetts Dept. of Corrections in their defense of a lawsuit brought by prisoner Katheena Soneeya. March 22, 2011 Deposition in Boston
- Witness for Florida Department of Corrections in Keohone case, July, 2017

**Consulting:**

- Massachusetts Department of Corrections—evaluation of 12 transsexual prisoners and the development of a Gender Identity Disorders Program for the state prison system.
- Monthly consultation with the GID treatment team since February 2009 and the GID policy committee since February 2010
- California Department of Corrections and Rehabilitation; 2012-2015; education, inmate evaluation, commentary on inmate circumstances, suggestions on future policies
- Virginia Department of Corrections –evaluation of an inmate

- New Jersey Department of Corrections—evaluation of an inmate

**Grant Support/Research Studies;**

- Principal Investigator of approximately 70 separate studies involving pharmacological interventions for sexual dysfunction since 1989.
- TAP—studies of Apomorphine sublingual in treatment of erectile dysfunction
- Pfizer—Sertraline for premature ejaculation
- Pfizer—Viagra and depression; Viagra and female sexual dysfunction; Viagra as a treatment for SSRI-induced erectile dysfunction
- NIH- Systemic lupus erythematosus and sexuality in women
- Sihler Mental Health Foundation
  - Program for Professionals
  - Setting up of Center for Marital and Sexual Health
  - Clomipramine and Premature ejaculation
  - Follow-up study of clergy accused of sexual impropriety
  - Establishment of services for women with breast cancer
- Alza—controlled study of a novel SSRI for rapid ejaculation
- Pfizer—Viagra and self-esteem
- Pfizer- double-blind placebo control studies of a compound for premature ejaculation
- Johnson & Johnson – controlled studies of Dapoxetine for rapid ejaculation
- Proctor and Gamble: multiple studies to test testosterone patch for post menopausal sexual dysfunction for women on and off estrogen replacement
- Lilly-Icos—study of Cialis for erectile dysfunction
- VIVUS – study for premenopausal women with FSAD
- Palatin Technologies- studies of bremelanotide in female sexual dysfunction—first intranasal then subcutaneous administration
- Medtap – interview validation questionnaire studies
- HRA- quantitative debriefing study for Female partners of men with premature ejaculation, Validation of a New Distress Measure for FSD,
- Boehringer-Ingelheim- double blind and open label studies of a prosexual agent for hypoactive female sexual desire disorder
- Biosante- studies of testosterone gel administration for post menopausal women with HSDD
- J&J a single-blind, multi-center, in home use study to evaluate sexual enhancement effects of a product in females.
- UBC-Content validity study of an electronic FSEP-R and FSDD-DAO and usability of study PRO measures in premenopausal women with FSAD, HSDD or Mixed FSAD/HSDD
- National registry trial for women with HSDD
- Endoceutics—two studies of DHEA for vaginal atrophy and dryness in post menopausal women

- Palatin—study of SQ Bremelanotide for HSDD and FSAD
- Trimel- a double-blind, placebo controlled study for women with acquired female orgasmic disorder.
  - S1 Biopharma- a phase 1-B non-blinded study of safety, tolerability and efficacy of Lorexys in premenopausal women with HSDD
- HRA – qualitative and cognitive interview study for men experiencing PE

**Publications:**

Books:

- 1) Pariser SR, Levine SB, McDowell M (eds.), Clinical Sexuality, Marcel Dekker, New York, 1985
- 2) Sex Is Not Simple, Ohio Psychological Publishing Company, 1988
  - (a) Translated into German as Angstfreie Sexualität: Glück und Erfüllung in der Liebe, Wilhelm Heyne Verlag, Muchen, 1992
  - (b) Reissued in paperback as: Solving Common Sexual Problems: Toward a Problem Free Sexual Life, Jason Aronson, Livingston, NJ. 1997
- 3) Sexual Life: A Clinician's Guide. Plenum Publishing Corporation. New York, 1992
  - (a) See review in Archives of Sexual Behavior 28(4): 361-363,1999
- 4) Sexuality in Midlife. Plenum Publishing Corporation. New York, 1998
  - (a) See review in Am Journal of Psychiatry 156((9):1468, 1999
  - (b) See review in Contemporary Psychology APA Review of Books 44(4):293-295, 1999
  - (c) See review J Sex Education and Therapy January, 2000
  - (d) See review J Sex and Marital Therapy, Winter, 2000
- 5) Editor. Clinical Sexuality. Psychiatric Clinics of North America, March, 1995.
- 6) Editor, (Candace Risen and Stanley Althof, associate editors) Handbook of Clinical Sexuality for Mental Health Professionals. Routledge, New York, 2003
  1. see review American Journal of Psychiatry April, 2005
  2. 2006 SSTAR Book Award: Exceptional Merit
  3. see review in Archives of Sexual Behavior 35(6):757-758
  4. see two reviews in Journal of Sex and Marital Therapy 33(3):272-276
- 7) Demystifying Love: Plain Talk For The Mental Health Professional. Routledge, New York, 2006
  - (a) See review in Psychiatric Times, August 2008 by Leonore Tiefer
  - (b) See review in Journal of Sex and Marital Therapy 34(5)-459-460.
- 8) Senior editor, (Candace B. Risen and Stanley E. Althof, Associate editors), Handbook of Clinical Sexuality for Mental Health Professionals. 2<sup>nd</sup> edition Routledge, New York, 2010. See review by Pega Ren, J Sex & Marital Therapy
- 9) Barriers to Loving: A Clinician's Perspective. Routledge, New York, 2014.



- 10) Senior editor Candace B. Risen and Stanley E. Althof, Associate editors),  
Handbook of Clinical Sexuality for Mental Health Professionals. 3<sup>rd</sup> edition  
Routledge, New York, 2016

Research and Invited Papers:

(When his name is not listed in a citation, Dr. Levine is either the solo or the senior author)

- 1) Sampliner R. Parotid enlargement in Pima Indians. *Annals of Internal Medicine* 1970; 73:571-73
- 2) Confrontation and residency activism: A technique for assisting residency change: *World Journal of Psychosynthesis* 1974; 6: 23-26
- 3) Activism and confrontation: A technique to spur reform. *Resident and Intern Consultant* 173; 2
- 4) Medicine and Sexuality. *Case Western Reserve Medical Alumni Bulletin* 1974;37:9-11.
- 5) Some thoughts on the pathogenesis of premature ejaculation. *J. Sex & Marital Therapy* 1975; 1:326-334
- 6) Marital Sexual Dysfunction: Introductory Concepts. *Annals of Internal Medicine* 1976;84:448-453
- 7) Marital Sexual Dysfunction: Ejaculation Disturbances 1976; 84:575-579
- 8) Yost MA: Frequency of female sexual dysfunction in a gynecology clinic: An epidemiological approach. *Archives of Sexual Behavior* 1976;5:229-238
- 9) Engel IM, Resnick PJ, Levine SB: Use of programmed patients and videotape in teaching medical students to take a sexual history. *Journal of Medical Education* 1976;51:425-427
- 10) Marital Sexual Dysfunction: Erectile dysfunction. *Annals of Internal Medicine* 1976;85:342-350
- 11) Articles in *Medical Aspects of Human Sexuality*
  - (a) Treating the single impotent male. 1976; 10:123, 137
  - (b) Do men enjoy being caressed during foreplay as much as women do? 1977; 11:9
  - (c) Do men like women to be sexually assertive? 1977;11:44
  - (d) Absence of sexual desire in women: Do some women never experience sexual desire? Is this possibility genetically determined? 1977; 11:31
  - (e) Barriers to the attainment of ejaculatory control. 1979; 13:32-56.
  - (f) Commentary on sexual revenge.1979;13:19-21
  - (g) Prosthesis for psychogenic impotence? 1979;13:7
  - (h) Habits that infuriate mates. 1980;14:8-19
  - (i) Greenberger-Englander, Levine SB. Is an enema an erotic equivalent?1981; 15:116
  - (j) Ford AB, Levine SB. *Sexual Behavior and the Chronically Ill*

- Patients. 1982; 16:138-150
- (k) Preoccupation with wife's sexual behavior in previous marriage 1982; 16:172
- (l) Co-existing organic and psychological impotence. 1985;19:187-8
- (m) Althof SE, Turner LA, Kursh ED, Bodner D, Resnick MI, Risen CB. Benefits and Problems with Intracavernosal injections for the treatment of impotence. 1989;23(4):38-40
- 12) Male Sexual Problems. Resident and Staff Physician 1981:2:90-5
- 13) Female Sexual Problems. Resident and Staff Physician 1981:3:79-92
- 14) How can I determine whether a recent depression in a 40 year old married man is due to organic loss of erectile function or whether the depression is the source of the dysfunction? Sexual Medicine Today 1977;1:13
- 15) Corradi RB, Resnick PJ Levine SB, Gold F. For chronic psychologic impotence: sex therapy or psychotherapy? I & II Roche Reports; 1977
- 16) Marital Sexual Dysfunction: Female dysfunctions 1977; 86:588-597
- 17) Current problems in the diagnosis and treatment of psychogenic impotence. Journal of Sex & Marital Therapy 1977;3:177-186
- 18) Resnick PJ, Engel IM. Sexuality curriculum for gynecology residents. Journal of Medical Education 1978; 53:510-15
- 19) Agle DP. Effectiveness of sex therapy for chronic secondary psychological impotence Journal of Sex & Marital Therapy 1978;4:235-258
- 20) DePalma RG, Levine SB, Feldman S. Preservation of erectile function after aortoiliac reconstruction. Archives of Surgery 1978;113:958-962
- 21) Conceptual suggestions for outcome research in sex therapy Journal of Sex & Marital Therapy 1981;6:102-108
- 22) Lothstein LM. Transsexualism or the gender dysphoria syndrome. Journal of Sex & Marital Therapy 1982; 7:85-113
- 23) Lothstein LM, Levine SB. Expressive psychotherapy with gender dysphoria patients Archives General Psychiatry 1981; 38:924-929
- 24) Stern RG Sexual function in cystic fibrosis. Chest 1982; 81:422-8
- 25) Shumaker R. Increasingly Ruth: Towards understanding sex reassignment surgery Archives of Sexual Behavior 1983;12:247-61
- 26) Psychiatric diagnosis of patients requesting sex reassignment surgery. Journal of Sex & Marital Therapy 1980; 6:164-173
- 27) Problem solving in sexual medicine I. British Journal of Sexual Medicine 1982;9:21-28
- 28) A modern perspective on nymphomania. Journal of Sex & Marital Therapy 1982;8:316-324
- 29) Nymphomania. Female Patient 1982;7:47-54
- 30) Commentary on Beverly Mead's article: When your patient fears impotence. Patient Care 1982;16:135-9
- 31) Relation of sexual problems to sexual enlightenment. Physician and Patient 1983 2:62

- 32) Clinical overview of impotence. Physician and Patient 1983; 8:52-55.
- 33) An analytical approach to problem-solving in sexual medicine: a clinical introduction to the psychological sexual dysfunctions. II. British Journal of Sexual Medicine
- 34) Coffman CB, Levine SB, Althof SE, Stern RG Sexual Adaptation among single young adults with cystic fibrosis. Chest 1984;86:412-418
- 35) Althof SE, Coffman CB, Levine SB. The effects of coronary bypass in female sexual, psychological, and vocational adaptation. Journal of Sex & Marital Therapy 1984;10:176-184
- 36) Letter to the editor: Follow-up on Increasingly Ruth. Archives of Sexual Behavior 1984;13:287-9
- 37) Essay on the nature of sexual desire Journal of Sex & Marital Therapy 1984; 10:83-96
- 38) Introduction to the sexual consequences of hemophilia. Scandanavian Journal of Haemology 1984; 33:(supplement 40).75-
- 39) Agle DP, Heine P. Hemophila and Acquired Immune Deficiency Syndrome: Intimacy and Sexual Behavior. National Hemophilia Foundation; July, 1985
  - (a) Translated into German
  - (b) Translated into Spanish
- 40) Turner LA, Althof SE, Levine SB, Bodner DR, Kursh ED, Resnick MI. External vacuum devices in the treatment of erectile dysfunction: a one-year study of sexual and psychosocial impact. Journal of Sex & Marital Therapy
- 41) Schein M, Zyzanski SJ, Levine SB, Medalie JH, Dickman RL, Alemagno SA. The frequency of sexual problems among family practice patients. Family Practice Research Journal 1988; 7:122-134
- 42) More on the nature of sexual desire. Journal of Sex & Marital Therapy 1987;13:35-44
- 43) Waltz G, Risen CB, Levine SB. Antiandrogen treatment of male sex offenders. Health Matrix 1987; V.51-55.
- 44) Lets talk about sex. National Hemophilia Foundation January, 1988
- 45) Sexuality, Intimacy, and Hemophilia: questions and answers . National Hemophilia Foundation January, 1988
- 46) Prevalence of sexual problems. Journal Clinical Practice in Sexuality 1988;4:14-16.
- 47) Kursh E, Bodner D, Resnick MI, Althof SE, Turner L, Risen CB, Levine SB. Injection Therapy for Impotence. Urologic Clinics of North America 1988; 15(4):625-630
- 48) Bradley SJ, Blanchard R, Coates S, Green R, Levine S, Meyer-Bahlburg H, Pauly I, Zucker KJ. Interim report of the DSM-IV Subcommittee for Gender Identity Disorders. Archives of Sexual Behavior 1991;;20(4):333-43.
- 49) Sexual passion in mid-life. Journal of Clinical Practice in Sexuality 1991

- 6(8):13-19
- 50) Althof SE, Turner LA, Levine SB, Risen CB, Bodner DR, Resnick MI. Intracavernosal injections in the treatment of impotence: A prospective study of sexual, psychological, and marital functioning. *Journal of Sex & Marital Therapy* 1987; 13:155-167
  - 51) Althof SE, Turner LA, Risen CB, Bodner DR, Kursh ED, Resnick MI. Side effects of self-administration of intracavernosal injection of papaverine and phentolamine for treatment of impotence. *Journal of Urology* 1989;141:54-7
  - 52) Turner LA, Froman SL, Althof SE, Levine SB, Tobias TR, Kursh ED, Bodner DR. Intracavernous injections in the management of diabetic impotence. *Journal of Sexual Education and Therapy* 16(2):126-36, 1989
  - 53) Is it time for sexual mental health centers? *Journal of Sex & Marital Therapy* 1989;
  - 54) Althof SE, Turner LA, Levine SB, Risen CB, Bodner D, Kursh ED, Resnick MI. Sexual, psychological, and marital impact of self injection of papaverine and phentolamine: a long-term prospective study. *Journal of Sex & Marital Therapy*
  - 55) Althof SE, Turner LA, Levine SB, Risen CB, Bodner D, Kursh ED, Resnick MI. Why do so many men drop out of intracavernosal treatment? *Journal of Sex & Marital Therapy*. 1989;15:121-9
  - 56) Turner LA, Althof SE, Levine SB, Risen CB, Bodner D, Kursh ED, Resnick MI. Self injection of papaverine and phentolamine in the treatment of psychogenic impotence. *Journal of Sex & Marital Therapy*. 1989; 15(3):163-78
  - 57) Turner LA, Althof SE, Levine SB, Risen CB, Bodner D, Kursh ED, Resnick MI. Treating erectile dysfunction with external vacuum devices: impact upon sexual, psychological, and marital functioning. *Journal of Urology* 1990;141(1):79-82
  - 58) Risen CB, Althof SE. An essay on the diagnosis and nature of paraphilia *Journal of Sex & Marital Therapy* 1990; 16(2):89-102.
  - 59) Althof SE, Turner LA, Levine SB, Risen CB, Bodner DB, Kursh ED, Resnick MI. Through the eyes of women: the sexual and psychological responses of women to their partners' treatment with self-injection or vacuum constriction therapy. *International Journal of Impotence Research* (supplement 2)1990;346-7.
  - 60) Althof SE, Turner LA, Levine SB, Risen CB, Bodner DB, Kursh ED, Resnick MI. A comparison of the effectiveness of two treatments for erectile dysfunction: self injection vs. external vacuum devices. . *International Journal of Impotence Research* (supplement 2)1990;289-90
  - 61) Kursh E, Turner L, Bodner D, Althof S, Levine S. A prospective study on the use of the vacuum pump for the treatment of impotence. *International Journal of Impotence Research* (supplement 2)1990;340-1.
  - 62) Althof SE, Turner LA, Levine SB, Risen CB, Bodner DB, Kursh ED,

- Resnick MI. Long term use of intracavernous therapy in the treatment of erectile dysfunction in Journal of Sex & Marital Therapy 1991; 17(2):101-112
- 63) Althof SE, Turner LA, Levine SB, Risen CB, Bodner DB, Kursh ED, Resnick MI. Long term use of vacuum pump devices in the treatment of erectile dysfunction in Journal of Sex & Marital Therapy 1991;17(2):81-93
- 64) Turner LA, Althof SE, Levine SB, Bodner DB, Kursh ED, Resnick MI. A 12-month comparison of the effectiveness of two treatments for erectile dysfunction: self injection vs. external vacuum devices. Urology 1992;39(2):139-44
- 65) Althof SE, The pathogenesis of psychogenic impotence. J. Sex Education and Therapy. 1991; 17(4):251-66
- 66) Mehta P, Bedell WH, Cumming W, Bussing R, Warner R, Levine SB. Letter to the editor. Reflections on hemophilia camp. Clinical Pediatrics 1991; 30(4):259-260
- 67) Successful Sexuality. Belonging/Hemophilia. (Caremark Therapeutic Services), Autumn, 1991
- 68) Psychological intimacy. Journal of Sex & Marital Therapy 1991; 17(4):259-68
- 69) Male sexual problems and the general physician, Georgia State Medical Journal 1992; 81(5): 211-6
- 70) Althof SE, Turner LA, Levine SB, Bodner DB, Kursh E, Resnick MI. Through the eyes of women: The sexual and psychological responses of women to their partner's treatment with self-injection or vacuum constriction devices. Journal of Urology 1992; 147(4):1024-7
- 71) Curry SL, Levine SB, Jones PK, Kurit DM. Medical and Psychosocial predictors of sexual outcome among women with systemic lupus erythematosus. Arthritis Care and Research 1993; 6:23-30
- 72) Althof SE, Levine SB. Clinical approach to sexuality of patients with spinal cord injury. Urological Clinics of North America 1993; 20(3):527-34
- 73) Gender-disturbed males. Journal of Sex & Marital Therapy 19(2):131-141, 1993
- 74) Curry SL, Levine SB, Jones PK, Kurit DM. The impact of systemic lupus erythematosus on women's sexual functioning. Journal of Rheumatology 1994; 21(12):2254-60
- 75) Althof SE, Levine SB, Corty E, Risen CB, Stern EB, Kurit D. Clomipramine as a treatment for rapid ejaculation: a double-blind crossover trial of 15 couples. Journal of Clinical Psychiatry 1995;56(9):402-7
- 76) Risen CB, Althof SE. Professionals who sexually offend: evaluation procedures and preliminary findings. Journal of Sex & Marital Therapy 1994; 20(4):288-302

- 77) On Love, Journal of Sex & Marital Therapy 1995; 21(3):183-191
- 78) What is clinical sexuality? Psychiatric Clinics of North America 1995; 18(1):1-6
- 79) "Love" and the mental health professions: Towards an understanding of adult love. Journal of Sex & Marital Therapy 1996; 22(3):191-202
  - (a) Reprinted in Issues in Human Sexuality: Current & Controversial Readings with Links to Relevant Web Sites, 1998-9, Richard Blonna, Editor, Engelwood, Co. Morton Publishing Company, 1998
- 80) The role of Psychiatry in erectile dysfunction: a cautionary essay on the emerging treatments. Medscape Mental Health 2(8):1997 on the Internet. September, 1997.
- 81) Discussion of Dr. Derek Polonsky's SSTAR presentation on Countertransference. Journal of Sex Education and Therapy 1998; 22(3):13-17
- 82) Understanding the sexual consequences of the menopause. Women's Health in Primary Care, 1998
  - (a) Reprinted in the International Menopause Newsletter
- 83) Fones CSL, Levine SB. Psychological aspects at the interface of diabetes and erectile dysfunction. Diabetes Reviews 1998; 6(1):1-8
- 84) Guay AT, Levine SB, Montague DK. New treatments for erectile dysfunction. Patient Care March 15, 1998
- 85) Extramarital Affairs. Journal of Sex & Marital Therapy 1998; 24(3):207-216
- 86) Levine SB (chairman), Brown G, Cohen-Kettenis P, Coleman E, Hage JJ, Petersen M, Pfäfflin F, Shaeffer L, vanMasdam J, Standards of Care of the Harry Benjamin International Gender Dysphoria Association, 5<sup>th</sup> revision, 1998. International Journal of Transgenderism at <http://www.symposion.com/ijt>
  - (a) Reprinted by the Harry Benjamin International Gender Dysphoria Association, Minneapolis, Minnesota
  - (b) also published in:
- 87) Althof SE, Corty E, Levine SB, Levine F, Burnett A, McVary K, Stecher V, Seftel. The EDITS: the development of questionnaires for evaluating satisfaction with treatments for erectile dysfunction. Urology 1999;53:793-799
- 88) Fones CSL, Levine SB, Althof SE, Risen CB. The sexual struggles of 23 clergymen: a follow-up study. Journal of Sex & Marital Therapy 1999
- 89) The Newly Devised Standards of Care for Gender Identity Disorders. Journal of Sex Education and Therapy 24(3):1-11,1999
- 90) Levine, S. B. (1999). The newly revised standards of care for gender identity disorders. Journal of Sex Education & Therapy, 24, 117-127.



- 91) Melman A, Levine SB, Sachs B, Segraves RT, Van Driel MF. Psychological Issues in Diagnosis of Treatment (committee 11) in Erectile Dysfunction (A.Jarden, G.Wagner, S.Khoury, F. Guiliano, H.Padmanathan, R. Rosen, eds.) Plymbridge Distributors Limited, London, 2000
- 92) Pallas J, Levine SB, Althof SE, Risen CB. A study using Viagra in a mental health practice. J Sex&Marital Therapy.26(1):41-50, 2000
- 93) Levine SB, Stagno S. Informed Consent for Case Reports: the ethical dilemma between right to privacy and pedagogical freedom. Journal of Psychotherapy: Practice and Research, 2001, 10 (3): 193-201.
- 94) Alloggiamento T., Zipp C., Raxwal VK, Ashley E, Dey S. Levine SB, Froelicher VF. Sex, the Heart, and Sildenafil. Current Problems in Cardiology 26 June 2001(6):381-416
- 95) Re-exploring The Nature of Sexual Desire. Journal of Sex and Marital Therapy 28(1):39-51, 2002.
- 96) Understanding Male Heterosexuality and Its Disorders in Psychiatric Times XIX(2):13-14, February, 2002
- 97) Erectile Dysfunction: Why drug therapy isn't always enough. (2003) Cleveland Clinic Journal of Medicine, 70(3): 241-246.
- 98) The Nature of Sexual Desire: A Clinician's Perspective. Archives of Sexual Behavior 32(3):279-286, 2003 .
- 99) Laura Davis. What I Did For Love: Temporary Returns to the Male Gender Role. International Journal of Transgenderism, 6(4), 2002 and <http://www.symposion.com/ijt>
- 100) Risen C.B., The Crisis in the Church: Dealing with the Many Faces of Cultural Hysteria in The International Journal of Applied Psychoanalytic Studies, 1(4):364-370, 2004
- 101) Althof SE, Leiblum SR (chairpersons), Chevert-Measson M. Hartman U., Levine SB, McCabe M., Plaut M, Rodrigues O, Wylie K., Psychological and Interpersonal Dimensions of Sexual Function and Dysfunction in World Health Organization Conference Proceedings on Sexual Dysfunctions, Paris, 2003. Published in a book issued in 2004.
- 102) Commentary on Ejaculatory Restrictions as a Factor in the Treatment of Haredi (Ultra-Orthodox) Jewish Couples: How Does Therapy Work? Archives of Sexual Behavior, 33(3):June 2004
- 103) What is love anyway? J Sex & Marital Therapy 31(2):143-152,2005.
- 104) A Slightly Different Idea, Commentary on Y.M.Binik's Should Dyspareunia Be Retained as a Sexual Dysfunction in DSM-V? A Painful Classification Decision. Archives of Sexual Behavior 34(1):38-39, 2005. <http://dx.doi.org/10.1007/s10508-005-7469-3>
- 105) Commentary. Pharmacologic Treatment of Erectile Dysfunction: Not always a simple matter. BJM USA; Primary Care Medicine for the American Physician, 4(6):325-326, July 2004
- 106) Leading Comment: A Clinical Perspective on Infidelity. Journal of Sexual and Relationship Therapy, 20(2):143-153, May 2005.

- 107) Multiple authors. Efficacy and safety of sildenafil citrate (Viagra) in men with serotonergic antidepressant-associated erectile dysfunction: Results from a randomized, double-blind, placebo-controlled trial. Submitted to Journal of Clinical Psychiatry Feb 2005
- 108) Althof SE, Leiblum SR, Chevert-Measson M, Hartman U, Levine SB, McCabe M, Plaut M, Rodrigues O, Wylie K. Psychological and Interpersonal Dimensions of Sexual Function and Dysfunction. Journal of Sexual Medicine, 2(6): 793-800, November, 2005
- 109) Shifren JL, Davis SR, Moreau M, Waldbaum A, Bouchard C., DeRogatis L., Derzko C., Bearnson P., Kakos N., O'Neill S., Levine S., Wekselman K., Buch A., Rodenberg C., Kroll R. Testosterone Patch for the Treatment of Hypoactive Sexual Desire Disorder in Naturally Menopausal Women: Results for the INTIMATE NM1 Study. Menopause: The Journal of the North American Menopause Society 13(5) 2006.
- 110) Reintroduction to Clinical Sexuality. Focus: A Journal of Lifelong Learning in Psychiatry Fall 2005. III (4):526-531
- 111) PDE-5 Inhibitors and Psychiatry in J Psychiatric Practice 12 (1): 46-49, 2006.
- 112) Sexual Dysfunction: What does love have to do with it? Current Psychiatry 5(7):59-68, 2006.
- 113) How to take a Sexual History (Without Blushing), Current Psychiatry 5(8): August, 2006.
- 114) Linking Depression and ED: Impact on sexual function and relationships in Sexual Function and Men's Health Through the Life Cycle under the auspices of the Consortium for Improvement of Erectile Function (CIEF), 12-19, November, 2006.
- 115) The First Principle of Clinical Sexuality. Editorial. Journal of Sexual Medicine, 4:853-854, 2007
- 116) Commentary on David Rowland's editorial, "Will Medical Solutions to Sexual Problems Make Sexological Care and Science Obsolete?" Journal of Sex and Marital Therapy, 33(5), 2007 in press
- 117) Real-Life Test Experience: Recommendations for Revisions to the Standards of Care of the World Professional Association for Transgender Health International Journal of Transgenderism, Volume 11 Issue 3, 186-193, 2009
- 118) Sexual Disorders: Psychiatrists and Clinical Sexuality. Psychiatric Times XXIV (9), 42-43, August 2007
- 119) I am not a sex therapist! Commentary to I. Binik and M. Meana's article Sex Therapy: Is there a future in this outfit? Archives of Sexual Behavior, Volume 38, Issue 6 (2009), 1033-1034
- 119) Solomon A (2009) Meanings and Political Implications of "Psychopathology" in a Gender Identity Clinic: Report of 10 cases. Journal of Sex and Marital Therapy 35(1): 40-57.
- 120) Perelman, MA., Levine SB, Fischkoff SA. Randomized, Placebo-

- Controlled, Crossover Study to Evaluate the Effects of Intranasal Bremelanotide on Perceptions of Desire and Arousal in Postmenopausal Women with Sexual Arousal Disorder submitted to Journal of Sexual Medicine July 2009, rejected
- 121) What is Sexual Addiction? Journal of Sex and Marital Therapy.2010 May;36(3):261-75
  - 122) David Scott (2010) Sexual Education of Psychiatric Residents. Academic Psychiatry, October-November, 2010
  - 123) Chris G. McMahon, Stanley E. Althof, Joel M. Kaufman, Jacques Buvat, Stephen B. Levine, Joseph W. Aquilina, Fisseha Tesfaye, Margaret Rothman, David A. Rivas, Hartmut Porst. Efficacy and Safety of Dapoxetine for the Treatment of Premature Ejaculation: Integrated Analysis of Results From 5 Phase 3 Trials Journal of Sexual Medicine 2011 Feb;8(2):524-39.
  - 124) Commentary on Consideration of Diagnostic Criteria for Erectile Dysfunction in DSM V. Journal of Sexual Medicine July 2010
  - 125) Hypoactive Sexual Desire Disorder in Men: Basic types, causes, and treatment. Psychiatric Times 27(6)4-34. 2010
  - 126) Male Sexual Dysfunctions, an audio lecture, American Physician Institute 2013
  - 127) Fashions in Genital Fashion: Where is the line for physicians? Commentary on David Veale and Joe Daniels' Cosmetic Clitoridectomy in a 33-year-old woman. Archives of Sexual Behavior, epub ahead of print Sept 24, 2011. Arch Sex Behav (2012) 41:735–736 DOI 10.1007/s10508-011-9849-7
  - 128) Review: Problematic Sexual Excess. Neuropsychiatry 2(1):1-12, 2012  
129). The Essence of Psychotherapy. Psychiatric Times 28 (2): August 2, 2012 translated into Portuguese and republished in Revista Latinoamericana de Psicopatologia Fundamental (latin-American Journal of Fundamental Psychopathology) in press 2012.
  - 130) Parran TV, Pisman, AR, Youngner SJ, Levine SB.Evolution of remedial CME course in professionalism: Addressing learner needs, developing content, and evaluating outcomes. *Journal of Continuing Education in the Health Professions*, 33(3): 174-179, 2013.
    - 131) Love and Psychiatry. Psychiatric Times November 2013
    - 132) Orgasmic Disorders, Sexual Pain Disorders, and Sexual Dysfunction Due to a Medical Condition. Board Review Psychiatry 2013-2014 Audio Digest CD 27. Audio recording of a one-hour lecture available October 2013.
    - 133) Towards a Compendium of the Psychopathologies of Love. Archives of Sexual Behavior Online First December 25, 2013 DOI 10.1007/s10508-013-0242-6 43(1)213-220.
    - 134) Flibanserin. (editorial) Archives of Sexual Behavior 44 (8), 2015 November 2015. DOI: 10.1007/s10508-015-0617-y

- 135) Reflections of an Expert on the Legal Battles Over Prisoners with Gender Dysphoria. *J Am Acad Psychiatry Law* 44:236–45, 2016
- 136) Cooper E, McBride J, Levine SB. Does Flibanserin have a future? *Psychiatric Times* accepted October 23, 2015.
- 137) Levine SB, Sheridan DL, Cooper EB. The Quest for a Prosexual Medication for Women, *Current Sexual Health Reports* (2016) 8: 129. doi:10.1007/s11930-016-0085-y
- 138) Why Sex Is Important: Background for Helping Patients with Their Sexual Lives., *BJPsych Advances* (2017), vol. 23, 0–0 doi: 10.1192/apt.bp.116.016428
- 139) Flibanserin: Offene Forschungsfragen , *Zeitschrift für Sexualforschung*. 29: 170-175, 2016. This is a translation of 134).
- 140) Commentary on "Asexuality: Orientation, paraphilia, dysfunction, or none of the above? *Archives Sexual Behavior*, [Archives of Sexual Behavior](#) April 2017, Volume 46, [Issue 3](#), pp 639–642 DOI: 10.1007/s10508-017-0947-z
- 141) Sexual Dysfunction in Clinical Psychiatry, *Psychiatric Times*, March 2017
- 142) Ethical Concerns About the Emerging Treatment of Gender Dysphoria *Journal of Sex and Marital Therapy*, March, 2017 DOI 10.1080/0092623X.2017.1309482
- 143) The Psychiatrist's Role in Managing Transgender Youth: Navigating Today's Politicized Terrain. *CMEtoGO® Audio Lecture Series*, May 2017
- 144) Transitioning Back to Maleness: A Case Report. *Archives of Sexual Behavior*, in review 2017

#### Chapters

1. Overview of Sex Therapy. In Sholevar GP (ed) *The Handbook of Marriage and Marital Therapy*. New York. Spectrum Publications, 1981 pp417-41
2. Why study sexual functioning in diabetes? In Hamburg BA, Lipsett LF, Inoff GE, Drash A (eds) *Behavioral & Psychosocial Issues in Diabetes: Proceedings of a National conference*. Washington, DC. US Dept. of Health & Human Services. PHS NIH, Pub. #80-1933
3. Sexual Problems in the Diabetic in Bleicher SJ, Brodoff B (eds) *Diabetes Mellitus and Obesity*. Williams and Wilkins, 1992
4. Clinical Introduction to Human Sexual Dysfunction. In Pariser SF, Levine SB, McDowell M (eds) *Clinical Sexuality*. New York, Marcel Dekker Publisher, 1983.
5. Psychodynamically-oriented clinician's overview of psychogenic impotence. In RT Segraves (ed) *Impotence*. New York, Plenum, 1985
6. Origins of sexual preferences. In Shelp EE (ed) *Sexuality and Medicine*.

- D. Reidel Publishing co. 1987. Pp39-54.
7. Hypoactive Sexual Desire and Other Problems of Sexual Desire. In H. Lief (ed). The Treatment of Psychosexual Dysfunctions/ III. American Psychiatric Press, chapter 207.pp2264-79, 1989
8. Psychological Sexual Dysfunction. In Sudak H (ed) Clinical Psychiatry. Warren H. Green. St. Louis, 1985
9. Male sexual dysfunction. In Sudak H (ed) Clinical Psychiatry. Warren H. Green. St. Louis, 1985
10. Sexuality and Aging. In Sudak H (ed) Clinical Psychiatry. Warren H. Green. St. Louis, 1985
11. Homosexuality. In Sudak H (ed) Clinical Psychiatry. Warren H. Green. St. Louis, 1985
12. Individual and intrapsychic factors in sexual desire. In Leiblum SR, Rosen RC (eds). Clinical Perspectives on Sexual Desire Disorders. Guilford Press, New York, 1988, pp21-44
13. Gender Identity Disorders. In Sadock B, Kaplan H(eds). Comprehensive Textbook of Psychiatry, Baltimore, William and Wilkins, 1989, pp 1061-9
14. Intrapsychic and Interpersonal Aspects of Impotence: Psychogenic Erectile Dysfunction. In Leiblum SR, Rosen RC (eds). Erectile Disorders: Assessment and Treatment. Guilford Press, New York, 1992
15. Psychological Factors in Impotence. In Resnick MI, Kursh ED, (eds.) Current Therapy in Genitourinary Surgery, 2<sup>nd</sup> edition. BC Decker, 1991, pp549-51
16. The Vagaries of Sexual Desire. In Leiblum SR, Rosen RC (eds). In Case Studies in Sex Therapy. Guilford Press, New York, 1995
17. Rosenblatt EA. Sexual Disorders (chapter 62). In Tasman A, Kay J, Liberman JA (eds). Psychiatry Volume II, W.B.Saunders, Philadelphia. 1997, pp 1173-2000.
18. Althof SE. Psychological Evaluation and Sex Therapy. In Mulcahy JJ (ed) Diagnosis and Management of Male Sexual Dysfunction Igaku-Shoin, New York, 1996, pp74-88
19. Althof SE, Levine SB. Psychological Aspects of Erectile Dysfunction. In Hellstrum WJG (ed) Male Infertility and Dysfunction. Springer-Verlag, New York, 1997. pp 468-73
20. Paraphilias. In Comprehensive Textbook of Psychiatry/VII. Sadock BJ, Sadock VA (eds.) Lippincott Williams & Wilkins, Baltimore, 1999, pp1631-1645.
21. Women's Sexual Capacities at Mid-Life in The Menopause: Comprehensive Management B. Eskin (ed). Parthenon Publishing, Carnforth, UK, 2000.
22. Male Heterosexuality in Masculinity and Sexuality:Selected Topics in the Psychology of Men, (Richard C. Friedman and Jennifer I. Downey, eds) Annual Review of Psychiatry, American Psychiatric Press,

- Washington, DC, W-18. pp29-54.
23. R.T.Segraves. Introduction to section on Sexuality: Treatment of Psychiatric Disorders-III (G.O.Gabbard, ed), American Psychiatric Press, Washington, DC, 2001
24. Sexual Disorders (2003) in Tasman A, Kay J, Liberman JA (eds). Psychiatry 2<sup>nd</sup> edition, Volume II, W.B.Saunders, Philadelphia. Chapter 74
25. What Patients Mean by Love, Psychological Intimacy, and Sexual Desire (2003) in SB Levine, CB Risen, SE Althof (eds) Handbook of Clinical Sexuality for Mental Health Professionals, Brunner-Routledge, New York, pp.21-36.
26. Infidelity (2003) in SB Levine, CB Risen, SE Althof (eds) Handbook of Clinical Sexuality for Mental Health Professionals, Brunner-Routledge, New York, pp57-74
27. Preface (2003) in SB Levine, CB Risen, SE Althof (eds) Handbook of Clinical Sexuality for Mental Health Professionals, Brunner-Routledge, New York, pp xiii-xviii
28. A Psychiatric Perspective on Psychogenic Erectile Dysfunction (2004) in T.F. Lue (ed) Atlas of Male Sexual Dysfunction, Current Medicine, Philadelphia Chapter 5
29. Levine, SB., Seagraves, RT. Introduction to Sexuality Section, Treatment of Psychiatric Disorders, 3<sup>rd</sup> edition (Gabbard GO, editor), American Psychiatric Press, 2007
30. Risen CB, (2009)Professionals Who Are Accused of Sexual Boundary Violations *In Sex Offenders: Identification, Risk Assessment, Treatment, and Legal Issues* edited by Fabian M. Saleh, Albert J. Grudzinskas, Jr., and John M. Bradford, Oxford University Press, 2009
31. What Patients Mean by Love, Intimacy, and Sexual Desire, in Handbook of Clinical Sexuality for Mental Health Professionals edited by Levine SB, Risen, CB, and Althof, SE, Routledge, New York, 2010
32. Infidelity in Handbook of Clinical Sexuality for Mental Health Professionals edited by Levine SB, Risen, CB, and Althof, SE, Routledge, New York, 2010
33. Scott DL, Levine, SB. Understanding Gay and Lesbian Life in Handbook of Clinical Sexuality for Mental Health Professionals edited by Levine SB, Risen, CB, and Althof, SE, Routledge, New York, 2010
34. Levine, SB, Hasan, S., Boraz M. (2009) Male Hypoactive Sexual Desire Disorder (HSDD) in Clinical Manual of Sexual Disorders (R. Balon and RT Segraves, eds), American Psychiatric Press, Washington, DC.
35. Levine, SB. Sexual Disorders in Fundamentals of Psychiatry (by Allan Tasman and Wanda Mohr,eds.)  
<<http://eu.wiley.com/WileyCDA/WileyTitle/productCd-0470665777.html>>, .
36. Infidelity in Principles and Practices of Sex Therapy (I Binik, K. Hall,



- editors), 5<sup>th</sup> edition, Guilford Press, New York, 2014.
37. Why is Sex Important? In Handbook of Clinical Sexuality for Mental Health Professionals 3<sup>rd</sup> ed. [SB Levine, CB Risen, SE Althof, eds] New York. Routledge, 2016, Chapter 1
38. The Rich Ambiguity of Key Terms: Making Distinctions. In Handbook of Clinical Sexuality for Mental Health Professionals 3<sup>rd</sup> ed. [SB Levine, CB Risen, SE Althof, eds] New York. Routledge, 2016. Chapter 4
39. The Mental Health Professional's Treatment of Erection Problems . In Handbook of Clinical Sexuality for Mental Health Professionals 3<sup>rd</sup> ed. [SB Levine, CB Risen, SE Althof, eds] New York. Routledge, 2016 Chapter 11
40. Why is Sex Important? In Sexual Health in the Couple: Management of Sexual Dysfunction in Men and Women [L Lipshultz, A Pastuszak, M Perelman, A Giraldi, J Buster, eds.] New York, Springer, 2016 in press.

#### **Book Reviews**

1. Homosexualities: A Study of Diversity Among Men and Women by Alan P. Bell and Martin S. Weinberg, Simon and Schuster, New York, 1978. In Journal of Sex & Marital Therapy 1979; 5:
2. Marriage and Marital Therapies: Psychoanalytic, Behavioral & System Theory Perspectives by TJ Paolino and BS McCrady. Brunner/Mazel, New York, 1978. In Journal of Sex & Marital Therapy 1979; 5:
3. Management of Male Impotence. Volume 5 International Perspectives in Urology AH Bennett, (ed) Williams and Wilkins, Baltimore, 1992. In American Journal of Psychiatry, 1984
4. The Sexual Relationship by DE Scharff, Routledge & Kegan Paul, 1982 in Family Process 1983;22:556-8
5. Phenomenology and Treatment of Psychosexual Disorders, by WE Fann, I Karacan, AD Pokorny, RL Williams (eds). Spectrum Publications, New York, 1983. In American Journal of Psychiatry 1985;142:512-6
6. The Treatment of Sexual Disorders: Concepts and Techniques of Couple Therapy, G Arentewicz and G Schmidt. Basic Books, New York, 1983. In American Journal of Psychiatry 1985;142:983-5
7. Gender Dysphoria: Development, Research, Management. BN Steiner (ed). Plenum Press, 1985 in Journal of Clinical Psychiatry, 1986
8. Gender Dysphoria: Development, Research, Management. BN Steiner (ed). Plenum Press, 1985 in Contemporary Psychology 1986;31:421-2 [titled, The Limitations of Science, the Limitations of Understanding]
9. Psychopharmacology of Sexual Disorders by M Segal (ed) John Libbey & Co Ltd, London, 1987 in American Journal of Psychiatry 1987;144:1093
10. "The Sissy Boy Syndrome" and the Development of Homosexuality by R

- Green. Yale University Press, New Haven, 1987. In American Journal of Psychiatry 1988;145:1028
11. Male Homosexuality: A contemporary psychoanalytic perspective by RC Friedman, Yale University Press, New Haven, 1988 in Journal of Clinical Psychiatry 1989;50:4, 149
12. Sexual Landscapes: Why we are what we are, why we love whom we love. By JD Weinrich, Charles Schribner's Sons, New York, 1987 in Archives of Sexual Behavior 21 (3):323-26, 1991
13. How to Overcome Premature Ejaculation by HS Kaplan, Brunner/Mazel, New York, 1989 in Journal of Clinical Psychiatry 51(3):130, 1990
14. Clinical Management of Gender Identity Disorders in Children and Adults R. Blanchard, BN Steiner (eds) American Psychiatry Press, Washington, DC, 1990. In Journal of Clinical Psychiatry 52(6):283, 1991
15. Psychiatric Aspects of Modern Reproductive Technologies. NL Stotland (ed) American Psychiatric Press, Washington DC, 1990. In Journal of Clinical Psychiatry 1991;52(9):390
16. Homosexualities: Reality, Fantasy, and the Arts. CW Socarides, VD Volkan (eds). International Universities Press, Madison, Connecticut, 1990. In Journal of Clinical Psychiatry 1992;(10)
17. Reparative Therapy of Male Homosexuality: A New Clinical Approach. J Nicolosi, Jason Aronson, Northvale NJ, 1992. In Contemporary Psychology 38(2):165-6, 1993 [entitled Is Evidence Required?]
18. Male Victims of Sexual Assault, GC Mezey, MB King (eds) Oxford University Press, New York, 1992. In Journal of Clinical Psychiatry 1993;54(9):358,
19. AIDS and Sex: An Integrated Biomedical and Biobehavioral Approach. B Voeller, JM Reinisch, M Gottlieb, Oxford University Press, New York, 1990. In American Journal of Psychiatry
20. Porn: Myths for the Twentieth Century by RJ Stoller, Yale University Press, New Haven, 1991. In Archives of Sexual Behavior 1995;24(6):663-668
21. Sexual Dysfunction: Neurologic, Urologic, and Gynecologic Aspects. R Lechtenberg, DA Ohl (eds) Lea & Febiger, Philadelphia, 1994. In Neurology
22. The Sexual Desire Disorders: Dysfunctional Regulation of Sexual
  - a. Motivation. HS Kaplan Brunner/Mazel, New York, 1995. In Neurology 1996; 47:316
23. Femininities, Masculinities, Sexualities: Freud and Beyond. N. Chodorow. The University Press of Kentucky, Lexington, 1994. Archives of Sexual Behavior 28(5):397-400,1999
24. Sexual Function in People with Disability and Chronic Illness:A Health Professional's Guide by ML Sipski, CJ Alexander. Aspen Publishers, Gaithersburg, Md, 1997. In Journal of Sex Education and Therapy, 1998;23(2):171-2

25. Sexual Aggression by J Shaw (ed). American Psychiatric Press, Washington, DC, 1998. In American Journal of Psychiatry, May, 1999
26. The *Wounded Healer*: Addiction-Sensitive Approach to the Sexually Exploitative Professional by Richard Irons and Jennifer P. Schneider. Jason Aronson, Northvale, N.J., 1999 in American Journal of Psychiatry 157(5):8-9,2000.
27. Culture of the Internet by Sara Kiesler (editor), Lawrence Erlbaum Associates, Mahway, New Jersey, 1997. 463pp in Journal of Sex Research in press, 2001
28. Psychological Perspectives on Human Sexuality. Lenore T. Szuchman and Frank Muscarella (editors), Wiley and Sons, New York, American Journal of Psychiatry, April, 2002
29. "How Sexual Science Operates" a review of Sex, Love, and Health in America: Private Choices and Public Policies. EO Laumann and RT Michael, editors. Chicago, University of Chicago, 2001 in Second Opinion, The Park Ridge Center for the Study of Health, Faith, and Ethics, 11:82-3, April, 2004.
30. Sexual Orientation and Psychoanalysis: Sexual Science and Clinical Practice. R.C.Friedman and J.I. Downey (eds). New York. Columbia University Press. in Archives of Sexual Behavior (2003) 31(5):473-474
31. Prozac on the Couch: Prescribing Gender in the Era of Wonder Drugs, Jonathon Michel Metzl. Duke University Press, Durham, 2003 in American Journal of Psychiatry, November, 2004.
32. Sex and Gender by M. Diamond and A.Yates Child Psychiatric Clinics of North America W. B. Saunders, Philadelphia, Pennsylvania, 2004, 268 pp in Archives of Sexual Behavior April 2007 on line publication in Dec.2006 at <http://dx.doi.org/10.1007/s10508-006-9114-7>
33. Getting Past the Affair: A program to help you cope, heal, and move on— together or apart by Douglas K. Snyder, Ph.D, Donald H. Baucom, Ph.D, and Kristina Coop Gordon, Ph.D, New York, Guilford Press, 2007 in Journal of Sex and Marital Therapy,34:1-3, 2007
34. Dancing with Science, Ideology and Technique. A review of Sexual Desire Disorders: A casebook Sandra R. Leiblum editor, Guilford Press, New York, 2010. In Journal of Sex Research 2011.
35. What is more bizarre: the transsexual or transsexual politics? A review of Men Trapped in Men's Bodies: Narratives of Autogynephilic Transsexualism by Anne A. Lawrence, New York, Springer, 2014. In Sex Roles: a Journal of Research, **Volume 70, Issue 3 (2014), Page 158-160**, 2014. DOI: 10.1007/s11199-013-0341-9
36. There Are Different Ways of Knowing. A review of: How Sexual Desire Works: The Enigmatic Urge by Frederick Toates, Cambridge, UK, Cambridge University Press, in Sexuality and Culture (2015) 19:407-409 DOI 10.1007/s12119-015-9279-0



IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF WEST VIRGINIA  
CHARLESTON DIVISION

-----  
B.P.J. by her next friend and)  
mother, HEATHER JACKSON, )

)  
Plaintiff, )

)  
vs. )

No. 2:21-cv-00316

)  
WEST VIRGINIA STATE BOARD OF )  
EDUCATION, HARRISON COUNTY )  
BOARD OF EDUCATION, WEST )  
VIRGINIA SECONDARY SCHOOL )  
ACTIVITIES COMMISSION, W. )  
CLAYTON BURCH in his official )  
capacity as State )  
Superintendent, DORA STUTLER, )  
in her official capacity as )  
Harrison County )  
Superintendent, and THE STATE )  
OF WEST VIRGINIA, )

)  
Defendants, )

)  
LAINEY ARMISTEAD, )

)  
Defendant-Intervenor.)  
-----)

VIDEOTAPED DEPOSITION OF

STEPHEN LEVINE

Wednesday, March 30, 2022

Volume I

Reported by:

ALEXIS KAGAY

CSR No. 13795

Job No. 5122884

PAGES 1 - 289

**Exhibit  
SL 03**

IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF WEST VIRGINIA  
CHARLESTON DIVISION

\_\_\_\_\_  
B.P.J. by her next friend and)  
mother, HEATHER JACKSON, )

Plaintiff, )

No. 2:21-cv-00316

vs. )

WEST VIRGINIA STATE BOARD OF )  
EDUCATION, HARRISON COUNTY )  
BOARD OF EDUCATION, WEST )  
VIRGINIA SECONDARY SCHOOL )  
ACTIVITIES COMMISSION, W. )  
CLAYTON BURCH in his official )  
capacity as State )  
Superintendent, DORA STUTLER, )  
in her official capacity as )  
Harrison County )  
Superintendent, and THE STATE )  
OF WEST VIRGINIA, )

Defendants, )

LAINIEY ARMISTEAD, )

Defendant-Intervenor.)  
\_\_\_\_\_)

Remote videotaped deposition of  
STEPHEN LEVINE, Volume I, taken on behalf of Plaintiff,  
with all participants appearing remotely, beginning at  
9:09 a.m. and ending at 5:46 p.m. on Wednesday,  
March 30, 2022, before ALEXIS KAGAY, Certified  
Shorthand Reporter No. 13795.



1 APPEARANCES (via Zoom Videoconference):

2  
3 For The Plaintiff B.P.J.:

4 COOLEY

5 BY: KATELYN KANG

6 BY: VALERIA M. PELET DEL TORO

7 BY: ANDREW BARR

8 BY: KATHLEEN HARTNETT

9 BY: JULIE VEROFF

10 BY: ELIZABETH REINHARDT

11 BY: ZOE HELSTROM

12 Attorneys at Law

13 500 Boylston Street

14 14th Floor

15 Boston, Massachusetts 02116-3740

16 617.937.2305

17 KKang@Cooley.com

18 VPeletDelToro@Cooley.com

19 ABarr@Cooley.com

20 KHartnett@cooley.com

21 JVeroff@Cooley.com

22 ZHolstrom@Cooley.com

1 APPEARANCES (Continued) :

2  
3 For Plaintiff:

4 LAMBDA LEGAL

5 BY: SRUTI SWAMINATHAN

6 BY: MAIA ZELKIND

7 Attorneys at Law

8 120 Wall Street

9 Floor 19

10 New York, New York 10005-3919

11 SSwaminathan@lambdalegal.org

12 MZelkind@lambdalegal.org

13  
14  
15 For the Intervenor:

16 ALLIANCE DEFENDING FREEDOM

17 BY: ROGER BROOKS

18 BY: LAWRENCE WILKINSON

19 Attorneys at Law

20 1000 Hurricane Shoals Road, NE 30043

21 RBrooks@adflegal.org

22 LWilkinson@adflegal.org

23  
24  
25  
Page 4

1 APPEARANCES (Continued):

2  
3  
4 For the State of West Virginia:

5 WEST VIRGINIA ATTORNEY GENERAL

6 BY: DAVID TRYON

7 Attorney at Law

8 112 California Avenue

9 Charleston West Virginia 25305-0220

10 681.313.4570

11 David.C.Tryon@wvago.gov

12  
13  
14 For West Virginia Board of Education and Superintendent  
15 Burch, Heather Hutchens as general counsel for the  
16 State Department of Education:

17 BAILEY & WYANT, PLLC

18 BY: KELLY MORGAN

19 Attorney at Law

20 500 Virginia Street

21 Suite 600

22 Charleston, West Virginia 25301

23 KMorgan@Baileywyant.com

1 APPEARANCES (Continued):

2  
3 For defendants Harrison County Board of Education and  
4 Superintendent Dora Stutler:

5 STEPTOE & JOHNSON PLLC

6 BY: SUSAN L. DENIKER

7 Attorney at Law

8 400 White Oaks Boulevard

9 Bridgeport, West Virginia 26330

10 304.933.8154

11 Susan.Deniker@Steptoe-Johnson.com

12  
13  
14 For West Virginia Secondary School Activities  
15 Commission:

16 SHUMAN MCCUSKEY SLICER

17 BY: SHANNON ROGERS

18 Attorney at Law

19 1411 Virginia Street E

20 Suite 200

21 Charleston, West Virginia 25301-3088

22 SRogers@Shumanlaw.com

1 APPEARANCES (Continued) :

2

3 For West Virginia Secondary School Activities

4 Commission:

5 SHUMAN MCCUSKEY SLICER

6 BY: ROBERTA GREEN

7 Attorney at Law

8 1411 Virginia Street E

9 Suite 200

10 Charleston, West Virginia 25301-3088

11 RGreen@Shumanlaw.com

12

13

14

15 Also Present:

16 MITCH REISBORD - VERITEXT CONCIERGE

17

18 Videographer:

19 KIMBERLEE DECKER

20

21

22

23

24

25

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

## INDEX

WITNESS	EXAMINATION
---------	-------------

STEPHEN LEVINE	
----------------	--

Volume I	
----------	--

BY MS. HARTNETT	14
-----------------	----

## EXHIBITS

NUMBER	DESCRIPTION	PAGE
--------	-------------	------

Exhibit 86	Expert Declaration of Dr. Stephen B. Levine in Support of Plaintiff's Motion for Preliminary Injunction	51
------------	---	----

Exhibit 87	Declaration of Stephen B. Levine, M.D.	69
------------	--	----

Exhibit 88	Presentation of Healthcare Models for Transgender Adolescents	217
------------	---	-----

Exhibit 89	Video Clip	256
------------	------------	-----

Exhibit 90	Video Clip	258
------------	------------	-----



1	Exhibit 91	Video Clip	260
2			
3	Exhibit 92	Video Clip	261
4			
5	Exhibit 93	Video Clip	263
6			
7	Exhibit 94	Video Clip	265
8			
9	Exhibit 95	Video Clip	267
10			
11	Exhibit 96	Video Clip	267
12			
13	Exhibit 97	Video Clip	268
14			
15	Exhibit 98	Video Clip	269
16			
17	Exhibit 99	Video Clip	270
18			
19	Exhibit 100	Video Clip	271
20			
21	Exhibit 101	Video Clip	272
22			
23	Exhibit 102	Video Clip	275
24			
25	Exhibit 103	Video Clip	278

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

Exhibit 104	Video Clip	278
Exhibit 105	Video Clip	279

1 Wednesday, March 30, 2022

2 9:09 a.m. A.M.

3 THE VIDEOGRAPHER: We are on the record at  
4 9:09 a.m. on March the 30th of 2022.

5 All participants are attending remotely. 06:09:27

6 Audio and video recording will continue to  
7 take place unless all parties agree to go off the  
8 record.

9 This is media unit 1 of the recorded  
10 deposition of Dr. Stephen Levine, taken by counsel for 06:09:39  
11 the plaintiff, in the matter of B.P.J., by her be- --  
12 by her next friend and mother, Heather Jackson, versus  
13 West Virginia State Board of Education, filed in the  
14 U.S. District Court, for the Southern District of  
15 West Virginia, Charleston Division, Case 06:09:59  
16 Number 2:21-cv-00316.

17 My name is Kimberlee Decker from Veritext  
18 Legal Solutions, and I am the videographer. The court  
19 reporter is Alexis Kagay.

20 I am not related to any party in this action, 06:10:16  
21 nor am I financially interested in the outcome.

22 Counsel and all present will now state your  
23 appearances and affiliations for the record. If there  
24 are any objections to proceeding, please state them at  
25 the time of your appearance, beginning with the 06:10:31

Page 11

1       noticing attorney.

2               MS. HARTNETT: Good morning. I am Kathleen  
3       Hartnett from Cooley, LLP, and I represent the  
4       plaintiff B.P.J.

5               I will let my co-counsel introduce themselves,       06:10:40  
6       starting with my colleagues at Cooley.

7               MR. BARR: Good morning. Andrew Barr from  
8       Cooley, LLP, for the plaintiff.

9               MS. VEROFF: Good morning. This is Julie  
10      Veroff from Cooley, LLP, for Plaintiff.               06:10:53

11              MS. KANG: Good morning. This is Katelyn Kang  
12      from Cooley, LLP, for Plaintiff.

13              MS. PELET DEL TORO: Good morning. This is  
14      Valeria Pelet del Toro of Cooley, for Plaintiff.

15              MS. REINHARDT: Good morning. This is               06:11:00  
16      Elizabeth Reinhardt at Cooley, for Plaintiff.

17              MS. HELSTROM: Hello. This is Zoe Helstrom  
18      from Cooley, LLP, for Plaintiff.

19              COUNSEL SWAMINATHAN: Good morning. This is  
20      Sruti Swaminathan from Lambda Legal, for Plaintiff.       06:11:26  
21      And I have a paralegal at Lambda, Maia Zelkind, with me  
22      as well.

23              MR. BLOCK: Good morning. This is Josh Block  
24      from the ACLU, for Plaintiff.

25              MS. DENIKER: Good morning. Susan Deniker       06:11:44

Page 12

1 from Steptoe & Johnson, PLLC, representing Harrison  
2 County Board of Education and Superintendent Dora  
3 Stutler.

4 MS. MORGAN: This is Kelly Morgan on behalf of  
5 the West Virginia Board of Education and 06:11:58  
6 Superintendent Burch.

7 MS. ROGERS: This is Shannon Rogers on behalf  
8 of the West Virginia Secondary School Activities  
9 Commission.

10 MR. TRYON: This is David Tryon. I'm with the 06:12:12  
11 West Virginia attorney general's office, representing  
12 the State of West Virginia.

13 MR. BROOKS: This is Roger Brooks with  
14 Alliance Defending Freedom, representing the intervenor  
15 Lainey Armistead and defending Dr. Levine today in this 06:12:28  
16 deposition. With me is my colleague and law clerk,  
17 Lawrence Wilkinson.

18 THE VIDEOGRAPHER: Thank you.  
19 Will the court reporter please swear in the  
20 witness. 06:12:41

21  
22 STEPHEN LEVINE,  
23 having been administered an oath, was examined and  
24 testified as follows:  
25

EXAMINATION

BY MS. HARTNETT:

Q Good morning, Dr. Levine.

A Good morning.

MS. HARTNETT: Before we start, I'm just going 06:13:01  
to put a housekeeping matter on the record that the  
attorneys discussed before we went on the record and  
that is that objection to form preserves all objections  
other than privilege and that the parties will make an  
effort to use "form," "scope" and "terminology" as the 06:13:13  
shorthand objections. In addition, an objection by one  
defendant is an objection for all defendants.

Could any counsel for the defense let me know  
if they have any disagreement with that?

MR. BROOKS: We have agreed, in fact. 06:13:30

MS. HARTNETT: Thank you very much.

BY MS. HARTNETT:

Q So again, my name is Kathleen Hartnett, and  
I'm with the law firm called Cooley, LLP.

Can you hear me okay? 06:13:41

A I do. At this point, yes.

Q Okay. Please let me know if that changes.

I use she/her pronouns.

Would you please state and spell your name for  
the record. 06:13:53

Page 14



1	A	Stephen Barrett Levine, S-T-E-P-H-E-N
---	---	---------------------------------------

2 | B-A-R-R-E-T-T L-E-V-I-N-E.

3 Q And what pronouns do you use?

4	A	He/him.
---	---	---------

5 Q Thank you. Dr. Levine, you've been deposed 06:14:07

6 many times before; correct?

7	A Yes.
---	--------

8 Q Was the most recent deposition that you gave  
9 in September of last year, 2021?

10	A No.	06:14:21
----	-------	----------

11 Q What was the most recent deposition that you  
12 gave?

13           A     In -- within the last month, I was deposed in  
14     a Connectica- -- a Connecticut case involving a  
15     transgender prisoner. 06:14:41

16 Q Do you know the name of that case?

17           A     Probably Clark versus the department of  
18       corrections in Connecticut.  Connecticut Department of  
19       Corrections (sic).

20 Q Okay. And what was your -- the nature of your 06:15:01  
21 testimony in that Connecticut case, this recent  
22 deposition that you gave?

23           A     Well, I provided a psychiatric evaluation of  
24       the patient and made recommendations. It -- it was --  
25       I'm hesitating because -- I provided a thorough                     06:15:28

1 psychiatric evaluation of the developmental history and  
2 the in prison history of the patient and the -- the  
3 psychology of his new transgender identity.

4 Q And you say "new transgender identity."

5 Was the new identity of -- male or female? 06:16:02

6 A The -- the new identity as a transgender  
7 woman.

8 MR. BROOKS: And -- and, Counsel, I will  
9 caution that obviously any detail about a psychiatric  
10 evaluation of an individual prisoner is a matter 06:16:18  
11 covered by confidentiality that Dr. Levine is not free  
12 to get into detail about.

13 MS. HARTNETT: I hear you. I -- this is not a  
14 disclosed matter on his CV and is a recent deposition,  
15 so we'll have to just determine whether we need more 09:16:23  
16 information, but thank you.

17 BY MS. HARTNETT:

18 Q Could you let me know what -- without giving  
19 any personal identifying -- or, I guess, any more  
20 detail than you believe appropriate, could you tell me 09:16:33  
21 what the nature of any recommendations you made were in  
22 that matter?

23 A My recommendations were to provide a pathway  
24 towards further evaluation so that eventually a  
25 decision could be made about whether sex reassignment 09:16:56

Page 16

1 surgery would be appropriate.

2 The -- the reason I'm hesitating is that that  
3 really did not come to be the subject of the  
4 deposition. The subject of the deposition really was  
5 the contents of my evaluation, which was done two years 09:17:24  
6 before, and -- so lots of things had happened in the  
7 two years since I saw the patient or interviewed the  
8 patient and -- so I was not able to make  
9 recommendations based on current knowledge of the  
10 patient, and so I did not. 09:17:43

11 Q And was the -- prior to this recent deposition  
12 in Clark, was the most recent deposition before that  
13 the deposition in September of last year?

14 A Yes.

15 Q Thank you. And I'm asking that by way of 09:18:03  
16 introduction just because I want to make sure we're on  
17 the same page about the ground rules for the  
18 deposition, and it sounds like you've been through this  
19 before, but I'll just let you know my basic ground  
20 rules and make sure we're on the same page. 09:18:18

21 So I will ask questions, and you must answer  
22 the questions unless your counsel instructs you not to  
23 answer.

24 Do you understand that?

25 A I do. 09:18:26

Page 17

1 Q And if your counsel objects, you'll still need  
2 to answer my question unless you've been instructed not  
3 to answer.

4 Do you understand that?

5 A I do. 09:18:35

6 Q If you don't answer (sic) my question, could  
7 you please let me know, and I'll be happy to try to  
8 rephrase it or make it clear for you?

9 Does that make sense?

10 A I'll try to remember. 09:18:48

11 Q And if you answer, I will assume you  
12 understood the question.

13 Do you understand that?

14 A Yes.

15 Q I'm going to try -- try to take a break every 09:19:00  
16 hour or so. If you need a break at a different time,  
17 please let me know.

18 Do you understand that?

19 A I understand.

20 Q And if I've asked a question, you'll need to 09:19:11  
21 provide an answer before we take a break.

22 Do you also understand that?

23 A I do.

24 Q I will do my best not to speak over you -- and  
25 please use verbal answers so the court reporter can 09:19:25

Page 18

1 transcribe your answers. Nodding or shaking your head  
2 can't be captured on the transcript.

3 Do you understand that?

4 A I do, but I can guarantee you you'll have to  
5 remind me of that. 09:19:36

6 Q Well, you may have to do the same for me, but  
7 we'll try.

8 I also just want to explain what I'm going to  
9 mean when I use a couple of terms today.

10 For purposes of this deposition, when I say 09:19:51  
11 "cisgender," I will mean someone who's gender identity  
12 matches the sex that was recorded for that person at  
13 birth.

14 Do you understand that?

15 A Yes. 09:20:02

16 Q And then when I say the word "transgender," I  
17 will mean someone whose gender identity does not match  
18 the sex for which was recorded at birth.

19 Do you understand that?

20 A Yes. 09:20:13

21 Q And when I say "B.P.J.," I'm referring to the  
22 plaintiff in this case.

23 Do you understand that?

24 A Yes.

25 Q Do you understand that you are testifying 09:20:21

1 under oath today just as if you were testifying in  
2 court?

3 A Yes.

4 Q Is there anything that would prevent you from  
5 testifying truthfully today? 09:20:32

6 A No.

7 Q Are you taking any medication that would  
8 affect your ability to give truthful testimony?

9 A Well, I took a sleeping pill last night, but I  
10 feel reasonably alert today. 09:20:48

11 Q Okay. So you don't -- you don't have a belief  
12 that that medication you took last night will affect  
13 your ability to give truthful testimony today?

14 A I -- I don't think it will.

15 Q Do you know what case you're being deposed in 09:21:06  
16 today?

17 A Well, I -- yes.

18 Q What case is that?

19 A B.P.J. versus Department of Education.

20 Q And do you know what jurisdiction this case is 09:21:19  
21 from?

22 A West Virginia.

23 Q And do you have -- sorry.

24 Do you have an understanding of the issue  
25 presented by this case? 09:21:35

Page 20



1           A    I have an understanding. I'm not sure it is  
2           the correct understanding, but I do have an  
3           understanding.

4           Q    Understood. What is your understanding of  
5           this case? 09:21:47

6           A    The plaintiff and next friend and mother wish  
7           the young person to be able to compete in athletics  
8           according to their current gender identity and  
9           apparently the State Board of Education is --  
10          disagrees. 09:22:13

11          Q    Okay. Thank you.  
12                So we already touched on that you had been  
13           deposed previously. I just want to ask you about a  
14           couple of specific depositions you gave to see if you  
15           recall those? 09:22:29

16                There was a matter in North Carolina called  
17           Kadel that you gave a deposition in September of 2021  
18           regarding state employee healthcare.

19                Do you recall giving that deposition?

20          A    Would you repeat -- regarding what? I didn't 09:22:41  
21           hear that last phrase.

22          Q    I'll try to speak more slowly.

23                That was regarding -- so let me just start  
24           that one again.

25                So do you recall giving a deposition in a 09:22:51

Page 21

1 North Carolina matter called Kadel in September of 2021  
2 regarding state employee healthcare?

3 A Yes.

4 Q Do you recall giving a deposition in a Florida  
5 case in December of 2020 called "Claire"? That was 09:23:07  
6 also about state employee healthcare.

7 A Yes.

8 Q There also was a case called Keohane in  
9 Florida where you gave a deposition in 2017 and that  
10 was a prisoner case. 09:23:21

11 Do you recall that?

12 A Yes.

13 Q Did you give true and correct testimony in  
14 those depositions?

15 A Yes. 09:23:31

16 Q Have you always given true and correct  
17 testimony in your depositions?

18 A To the best of my knowledge, yes.

19 Q Thank you. And you've had depositions in  
20 cases involving prisoners who were seeking care for 09:23:45  
21 gender dysphoria; is that correct?

22 A Yes.

23 Q Have you ever testified in favor of a prisoner  
24 who was seeking medical care for gender dysphoria?

25 A Yes. 09:23:59

1 Q Can you describe those instances where you've  
2 testified in favor of a prisoner seeking medical care  
3 for gender dysphoria?

4 A In the last case involving a prisoner by the  
5 name of Soneeya, S-O-N-E-E-Y-A, I recommended transfer 09:24:14  
6 to a female prisoner and -- sorry -- transfer to a  
7 female prison and the opportunity to have sex  
8 reassignment surgery if, after a year of adaptation  
9 there, there were no significant decompensations or  
10 problems. 09:24:44

11 Q And do you remember what year you made that  
12 recommendation?

13 A I think it was 2019.

14 Q Okay. And can you -- are you aware of any  
15 other examples of you having testified in favor of a 09:25:05  
16 prisoner seeking medical care for gender dysphoria?

17 A I'm hesitating because medical care includes  
18 many things. And so the answer is yes. It involves  
19 accommodations to their current gender identity in  
20 terms of canteen items, for example, and it includes 09:25:35  
21 the prescription of cross gender -- cross-sex hormones.  
22 So I've been involved in the provision of those kind of  
23 things repeatedly over the years for prisoners.

24 Q Have you ever, other than in the Soneeya  
25 matter, recommended that a prisoner -- sorry -- 09:26:04

1 testified that a prisoner should receive gender  
2 confirmation surgery?

3 A I'm hesitating to answer the question because  
4 it's about testimony. In my work as consultant, I have  
5 repeatedly recommended both surgery and, more -- more 09:26:25  
6 commonly, hormone treatment, electrolysis treatment,  
7 canteen item treatment. Most of -- the vast majority  
8 of these cases never come to trial.

9 Q When is the last time that you recommended  
10 that a pres- -- a prisoner should have hormone 09:26:46  
11 treatment?

12 A It would have been the third Thursday in  
13 March, this year.

14 Q And where is that prisoner located?

15 A Massachusetts. 09:27:06

16 Q Can you estimate how many prisoners you've  
17 given a recommendation about through the course of your  
18 career?

19 A That would be very difficult. I've been the  
20 consultant to the department of corrections gender 09:27:30  
21 identity committee since, I think, 2008 and every month  
22 since that time, with less than one handful of  
23 exceptions, I've been present at discussions, and we've  
24 recommended accommodations in prison to people who  
25 declare identity as a trans woman. And I would say 09:27:58

1       probably, and I ask you not to hold me to this number,  
2       40 times.

3           Q     Sorry, 40 times describes what?

4           A     That -- that I've joined a group of people who  
5       decided to provide electrolysis, canteen item --                   09:28:25  
6       special privileges for canteen items, that is, female  
7       canteen items, the ability to shower alone, the ability  
8       to be tapped down or searched by a female attendant,  
9       not a male attendant, a correction officer, hormone --  
10      the beginning of hormone treatment and -- and, of               09:28:52  
11      course, bilateral mastectomies and -- and on several  
12      occasions, male gender confirming surgery for biologic  
13      males who are living as trans women. In other words,  
14      the whole gamete of services.

15          Q     So 40 times you've recommended something -- or       09:29:19  
16      joined in a recommendation for something for -- a  
17      prisoner to receive medical care, as you've broadly  
18      described that term?

19          A     Yes.

20          Q     And then how many times can you estimate where       09:29:34  
21      you had made a recommendation that the prisoner should  
22      not receive medical care, as you've broadly defined it?

23          A     I don't think I've ever recommended that no  
24      treatment be offered to this person. The -- the --  
25      because the treatment involves that entire array of               09:30:07

1 matters that I just delineated.

2 And so prisons -- or at least Massachusetts,  
3 where I work as a consultant, has been very --  
4 eventually, by 2008, has been -- have been very  
5 interested in providing individual services to -- to 09:30:26  
6 help these people diminish their pain about their  
7 incongruence, and I have been one of the people who  
8 devised the program.

9 Q The prisoner that you reco- -- you  
10 recommended -- sorry -- that you were referring earlier 09:30:49  
11 to, the one in the Clark matter, do you recall us  
12 discussing that?

13 A I do.

14 Q And that person identifies as female; correct?

15 A Yes. 09:31:00

16 Q Do you view that person as a female?

17 A I view that person as a trans woman.

18 Q You have just testified that you've never  
19 recommended that a -- no treatment be offered to a  
20 prisoner for gender dysphoria; is that correct? 09:31:22

21 A I'm hesitating because "no treatment"  
22 includes -- would include all of the above, of the  
23 array I previously listed, and at this moment, I don't  
24 recall ever saying no treatment should be given to this  
25 individual, no accommodation should be given to this 09:31:47



1 individual.

2 Q Do you recall if you've ever recommended that  
3 no surgery be permitted for an individual in prison?

4 A Oh, yes, I have. I have said that I didn't  
5 think sex reassignment surgery -- in those days, that's 09:32:06  
6 what we called it, but it's now called gender  
7 confirming surgery -- I have said I did not think  
8 sex -- that kind of surgery was indicated or  
9 necessary -- medically necessary.

10 Q And so how many times did you say that surgery 09:32:26  
11 was medically necessary?

12 A Would you repeat that, please.

13 Q How many times did you say that surgery was  
14 medically necessary for a prisoner?

15 MR. BROOKS: Objection; ambiguous. 09:32:45

16 THE WITNESS: You may or may not know that I  
17 do not like the term "medically necessary." I prefer  
18 to use the term "would be psychologically beneficial to  
19 this person." So that's the reason I'm hesitating  
20 answering your question. 09:33:12

21 I generally avoid using the term "medical  
22 necessity." Instead, I try to make a determination  
23 whether I think, in the -- in the long run, this  
24 particular intervention that we're talking about would  
25 be psychologically beneficial to the patient. 09:33:29

Page 27

1 BY MS. HARTNETT:

2 Q My question is whether you've ever recommended  
3 any gender confirming surgery as medically necessary  
4 for a prisoner.

5 A Yes, I -- I have signed my name to such 09:33:47  
6 documents, such recommendations, because where I work,  
7 in Massachusetts, this is the way that the -- most of  
8 the staff and -- and -- that -- that is the common term  
9 used to -- to justify that kind of intervention.

10 Q How many times have you signed your name to 09:34:10  
11 that kind of intervention for a prisoner?

12 A Perhaps five times.

13 Q And you referenced the Soneeya matter;  
14 correct?

15 A Correct. 09:34:38

16 Q And years earlier than the 2019 recommendation  
17 that you just described, you testified against surgery  
18 for that prisoner; correct?

19 A That is not correct.

20 Q What's not correct about that? 09:34:50

21 A That I did not testify -- I did not testify  
22 against sex reassignment surgery.

23 Q Did you testify against something earlier in  
24 that matter?

25 A I testified the recommendation to -- to have 09:35:05

1        what the judge called a soft landing, like first  
2        transferring the person to a female facility, and then,  
3        based upon her adaptation there, to have sex  
4        reassignment surgery.

5                In fact, that was really -- the issue was not        09:35:29  
6        whether the person should eventually have sex  
7        reassignment surgery, but -- but whether it should be  
8        done before transfer to the female facility or after  
9        transfer.

10            Q     Did that prisoner seek sex reassignment        09:35:46  
11            surgery before transfer?

12            A     Please repeat that.

13            Q     Did that prisoner seek sex reassignment  
14            surgery before transfer?

15            A     She did until we presented this idea to her,        09:36:04  
16            and she jumped at the idea. She thought it was a very  
17            good idea when we interviewed her. And by the time  
18            this case got to court, her attorneys were arguing for  
19            immediate sex reassignment surgery. But --

20            Q     So she -- by the time you were -- oh, pardon        09:36:27  
21            me. Please complete your answer.

22            A     So we were aware that, because we were in the  
23            room when we -- I discussed this with her, she was very  
24            happy with the idea of transfer with the -- because she  
25            was very positive that she would have a fine adaptation        09:36:41

Page 29

1 among women prisoners, and she was delighted.

2 And then months later, when this came to  
3 trial, the -- her attorney arg- -- was arguing against  
4 that.

5 Q So you testified against her wishes as 09:37:05  
6 expressed by her attorney at trial; correct?

7 A I never conceived that I was testifying  
8 against Soneeya. You may do that, but I -- that's not  
9 my concept.

10 Q In the cases where you've given testimony 09:37:24  
11 about employee healthcare coverage, you were testifying  
12 against the employee healthcare coverage for gender  
13 dysphoria; correct?

14 A Incorrect.

15 Q What's incorrect about that? 09:37:38

16 A What I was testifying to is my understanding  
17 of the state of science. I was not taking a stand that  
18 people should not have healthcare coverage. I was  
19 trying to inform the Court about what we knew about  
20 this subject and what we don't know about this subject. 09:37:58

21 I didn't take a position that -- that I knew  
22 what should be done. I was just here as a -- to offer  
23 what I understood about the state of science, about  
24 various aspects of surgical and medical and  
25 psychological care for the trans population. 09:38:18

Page 30

1 Q Are you aware in the Kadel and the Claire  
2 matters -- those are the North Carolina and Florida  
3 employee healthcare coverage matters -- your testimony  
4 was submitted by the defendants in that case against  
5 the relief being sought? Are you aware of that? 09:38:37

6 A I was aware that -- who employed me and what  
7 their purposes were, but -- but I was not enjoining  
8 psychologically with the idea that I was doing anything  
9 but offering the Court what I hope to be an objective  
10 appraisal of the state of knowledge based upon 09:39:01  
11 literature and, you know, participation in trans care  
12 over the years.

13 Q So were you, in those two matters, agnostic as  
14 to whether the employees received the healthcare  
15 coverage or not? 09:39:21

16 A Agnostic?

17 Q That you didn't have a view.

18 A Would you -- would you mind explaining that  
19 term? I'm -- I usually understand that in terms of  
20 religious notions. 09:39:34

21 Q That you did not have a view -- in those  
22 cases, Kadel and Claire, is it fair to say you did not  
23 have a view as to whether the healthcare coverage  
24 should be extended or not?

25 A I felt insufficient to make a societal 09:39:47

1 decision. I'm not an expert in the insurance industry  
2 at all. I -- I am certainly not an expert in the  
3 political processes in any particular state. The  
4 only -- the only knowledge base that I feel I have  
5 comes from the study of the literature and the 09:40:05  
6 participation in trans care, both in the community and  
7 in prison systems.

8 And so the fact that the State used my  
9 testimony does not really equate, in my mind, with my  
10 position on whether or not people should have 09:40:31  
11 healthcare insurance.

12 I -- again, to repeat, my understanding is I  
13 am somewhat knowledgeable about the state of science in  
14 this area and that the various people on law -- on the  
15 side of -- in -- in -- in judicial issues -- judicial 09:40:48  
16 matter want somebody who can articulate the state of --  
17 of knowledge. And that's what I do.

18 The state of knowledge should be applied, in  
19 my view, to both sides of the issue, not just, you  
20 know, the State or the Board of Education. It should 09:41:09  
21 be -- it should be established -- it should be relevant  
22 to the plaintiff's side.

23 Q Were you paid by the State in the  
24 North Carolina and the Florida matters for your  
25 testimony? 09:41:27



1           A     Ultimately, I think I was paid by the State,  
2     but the check did not come from the State. The check  
3     came from the lawyer who employed me.

4           Q     Understood. Have you ever provided testimony  
5     with your -- what you've described as your expertise in     09:41:46  
6     favor of -- on the side of extending the healthcare  
7     coverage to tran- -- to people seeking care for gender  
8     dysphoria?

9           A     No attorney representing that side of the  
10    issue has ever hired me, but if they would, I would be     09:42:03  
11    happy to present my knowledge or -- to, and they can do  
12    what they want with that testimony.

13          Q     You were deposed in at least one child custody  
14    matter in Texas where a child wanted to transition; is  
15    that correct?   09:42:26

16          A     I was.

17          Q     And you testified in trial at that matter,  
18    too?

19          A     I did.

20          Q     And was your testimony in that case in             09:42:37  
21    opposition to the desired transition?

22          A     The testimony in that case was to present the  
23    state of knowledge about this matter. I did not take a  
24    position that a child should or should not have a  
25    particular treatment. I was just informing the Court,     09:42:56

1 as I previously described to you. I thought I was a  
2 witness about the nature of knowledge about trans  
3 children.

4 THE WITNESS: Could you get me some water,  
5 please.

09:43:16

6 BY MS. HARTNETT:

7 Q Sorry, is your testimony that you, in that  
8 case, in the -- this is the Younger matter; is that  
9 correct?

10 A Yes. That's what I understand you to be  
11 referring to.

09:43:23

12 Q And your testi- -- your testimony today is  
13 that you were not testifying in opposition to the  
14 transition that the child -- of the child in the  
15 Younger matter?

09:43:36

16 A I was hired by the lawyer who was representing  
17 the father who did not want his son to be transitioned  
18 to a little girl, socially. But I was not testifying  
19 that the child should not be transitioned. I was  
20 testifying -- I had no knowledge of that -- I wasn't  
21 asked for that question. That -- that was never asked  
22 of me, Ms. Hartnett. What was asked of me was what we  
23 knew about this subject. And, therefore, I felt  
24 comfortable sharing the state of knowledge and -- and  
25 what is missing from our knowledge.

09:44:02

09:44:23

1           Again, it -- it has the appearance that I was  
2     testifying against the socialization of the child, but  
3     I think if you look closely at that, what I was doing  
4     was telling the Court what was known and what was not  
5     known and what the consequences were, the implications     09:44:45  
6     of treating the child one way versus another.

7           Q     So you did not testify in that matter that  
8     desistance was preferable to affirmation?

9           A     I actually don't recall if I made that  
10    statement. It's -- I just don't recall.                     09:45:09

11          Q     Okay. Has your testimony -- oh, sorry.

12                Have you testified in any other matters of --  
13    similar to the Younger matter, in which parents were  
14    disputing the proper care of their child who sought  
15    care for gender dysphoria?                                 09:45:37

16          A     Yes. There was a case that I believe is  
17    sealed in the Tucson court. I don't know if I'm  
18    allowed to give the name. I presume I can give the  
19    name. I don't know.

20          MR. BROOKS: If -- if it's sealed, I would not     09:45:56  
21    give any identifying information.

22          THE WITNESS: But the answer to your question  
23    is yes.

24    BY MS. HARTNETT:

25          Q     And in that matter, did your -- was your     09:46:05

1 testimony used by the party who was opposing the  
2 treatment for gender dysphoria for the child?

3 A In that particular matter, it was the parents,  
4 who hired me, who objected to losing custody of their  
5 child when the child was hospitalized for a suicide 09:46:38  
6 gesture and told the people in the hospital that her  
7 evil parents were preventing her, at age 13, from  
8 transitioning to being a boy. And her parents --

9 MR. BROOKS: I'm just going to interrupt and  
10 caution the witness. I'm not part of that case, but 09:47:03  
11 I -- nor do I want Dr. Levine to violate any  
12 confidentiality obligations.

13 So as you answer, whatever level of generality  
14 you think is appropriate, just be very careful not to  
15 disclose information that you believe you received in 09:47:18  
16 confidence and that remains confidential given the  
17 conduct of that case.

18 So I -- I don't want us in our proceedings to  
19 violate any obligations of that proceeding.

20 THE WITNESS: Well, given that, I actually 09:47:35  
21 think anything I would say about this would violate the  
22 confidentiality rule here, and I think I've told you  
23 enough about the case.

24 MS. HARTNETT: Well, I don't want to waste our  
25 time on the record discussing this, but we have a right 09:47:51

1 to discovery into your testimony, so we will follow up  
2 with counsel to figure how to get it.

3 BY MS. HARTNETT:

4 Q When was this testimony given?

5 A In the spring of 2021. And if I'm wrong, it 09:48:13  
6 was in the spring of 2020.

7 Q Thank you. And, sorry, what -- was the  
8 testimony given in deposition or trial or some other  
9 fashion?

10 A In juvenile court. 09:48:32

11 Q In what form did the testimony take?

12 MR. BROOKS: Objection; vague.

13 BY MS. HARTNETT:

14 Q Just, sorry, meaning written or oral.

15 A Oh, in person? I was in -- I was in person by 09:48:50  
16 video, and I was cross-examined, you know.

17 I also submitted a report of the psychiatric  
18 evaluation.

19 Q Any other testimony that you've given in a  
20 case involving parents and the potential care of a 09:49:13  
21 child with gender dysphoria?

22 A I submitted a rebuttal to a report in a case  
23 in Cincinnati I think the first week of January of this  
24 year. The case is called Siefert, S-I-E-F-O-R-D (sic),  
25 or E-R-T, something like that. Siefert versus Hamilton 09:49:49

Page 37

1 County, which is the Cincinnati county.

2 So that would be the answer to your question.

3 Q And what's the nature of that matter, the  
4 Siefert matter?

5 A The -- the child, who was identifying as a 09:50:08  
6 trans male, were treated -- the parents were treated  
7 during the hospitalization as persona non grata and the  
8 hospital refused to discharge the patient even though  
9 the patient did not meet criteria for continued  
10 hospitalization and -- so the -- the parents were 09:50:46  
11 objecting to the loss of parental rights.

12 Subsequently, the child reidentified as a  
13 female and -- so I don't know what the outcome has been  
14 legally. It's in process.

15 And I just commented on the limitations of 09:51:07  
16 the -- another expert who felt that it was justified to  
17 keep the child in the hospital against the parents'  
18 wishes, for two and a half months.

19 Q In the Tucson matter that you discussed,  
20 which, again, we will follow up on, but can you just 09:51:34  
21 tell me if that's been resolved? Do you know if that's  
22 reached a conclusion?

23 A Yes, that -- the -- the particular judicial  
24 issue was -- was resolved. Whether or not the parents  
25 are going to continue to sue the -- the child welfare 09:51:56



1 organization, I -- I don't know. I haven't heard -- I  
2 haven't had any follow-up on the case since it was  
3 adjudi- -- since it was resolved.

4 Q Thank you. Has your testimony ever been  
5 excluded by a court?

09:52:18

6 A Yes.

7 Q When?

8 A 2015.

9 Q What matter was that?

10 A It was in the matter of a prisoner named

09:52:33

11 Noseworthy (sic) in California.

12 Q And what is your understanding of how your  
13 testimony was excluded?

14 A Well, I didn't actually have testimony. I

15 submitted a psychiatric evaluation and a

09:52:50

16 recommendation, and I was never invited to a -- a

17 courtroom for that.

18 The judge -- I presented, in my written

19 deposition, an account of a female prisoner who had a

20 very extremely negative outcome from genital surgery,

09:53:12

21 and the judge -- the judge thought I was lying about

22 this case, and he also did not think that -- that I

23 followed the Harry -- the WPATH standards of care, and

24 he dismissed my -- without asking me one question,

25 without asking me do I have any evidence to show that I

09:53:39

Page 39

1 wasn't lying about this case, he -- he dismissed my  
2 recommendation.

3 So I'm aware that judges have their -- judges  
4 can make mistakes. Because I, in fact, have in my  
5 possession the case history, I saved the case history 09:54:01  
6 that was presented to me by the California Department  
7 of Corrections, and that -- no one seems to know that.  
8 Or at least the judge did not inquire about that. I  
9 never had a chance to defend myself and -- so that's --  
10 that's when my testimony was dismissed. 09:54:24

11 Q Thank you. Is there any other time where your  
12 testimony has been excluded by a court?

13 MR. BROOKS: Objection; vague.

14 THE WITNESS: Well, I believe that the impact  
15 of that judge in the Noseworthy -- Norsworthy case has 09:54:48  
16 influenced two other cases to discredit my position, at  
17 least whatever I said on those other cases -- on one  
18 other case.

19 One of the cases that -- that my name gets  
20 brought up about, I actually never submitted any 09:55:10  
21 testimony to, but someone quoted what I had taught in a  
22 workshop; and, therefore, the judge dismissed that  
23 testimony.

24 You should understand that since that time and  
25 even before that time, my testimonies have been 09:55:29

1       accepted by various courts, and -- for example, in the  
2       district court of Arizona, in a case involving  
3       insurance coverage, the judge quoted my testimony.  
4       That -- that was appealed to the Ninth Circuit Court,  
5       and the Ninth Circuit Court made -- made a reference       09:55:49  
6       to, but did not name my testimony.

7               And so it seems to me that since -- before  
8       2015, in that particular case, and subsequent to 2015,  
9       my testimony has been accepted by various courts, in  
10      various matters involving, you know, trans issues that       09:56:10  
11      I am asked to opine about.

12             Q     Thank you. Is there any other example you can  
13      think of where your testimony has been excluded by a  
14      court?

15             MR. BROOKS: Objection, vague.                       09:56:37

16             THE WITNESS: Well, I'm aware of the  
17      Noseworthy case, the -- the Edmo case, and there's a  
18      Hecox case.

19             But again, all these exclusions were  
20      objections to my expertise derived from the judge in       09:56:58  
21      the Norsworthy case.

22             And the answer to your specific question, I am  
23      not aware of any other situation where my testimony was  
24      excluded.

25             Q     Thank you. For the Noseworthy case, you did       09:57:13

1 submit an expert report; correct?

2 A I -- I -- yes.

3 Q So you understand this case involves sports;  
4 correct?

5 A Yes. 09:57:42

6 Q What, if any, prior testimony have you given,  
7 whether by declaration or report or oral testimony,  
8 about transgender participation in sports?

9 A I believe that both in the Connecticut case  
10 and in the Hecox case the expert opinion report that I 09:58:09  
11 gave about the state of knowledge in this field has  
12 been submitted for the Court's consideration.

13 I am not an expert, as you probably know, in  
14 matters of athletics and physiology. I am only  
15 providing information that I feel I know about, which 09:58:41  
16 is the knowledge and the lack thereof about certain  
17 issues related to trans care.

18 So I -- I've never really, as far as I know,  
19 as far as I remember, made an opinion about this should  
20 happen or this should not happen. I'm just providing 09:59:06  
21 information to the courts about what I know and what is  
22 not known by society or by science.

23 Q Thank you. So in this case, for example,  
24 B.P.J., is it fair to say you do not have an opinion as  
25 to whether she should be permitted to play sports? 09:59:25

Page 42

1           A    I do not have an opinion.

2           Q    Have you -- setting aside the context of  
3 transgender participation in sports, have you ever  
4 given any testimony of any kind in a matter related to  
5 sports? 09:59:51

6           A    I can't think of any.

7           Q    Have you given any prior testimony, whether by  
8 declaration, report or oral testimony, about  
9 prepubertal trans- -- transgender children?

10           MR. BROOKS: Let -- let me ask you to restate 10:00:16  
11 that question. Not to rephrase it, necessarily. I  
12 just want to hear it back.

13           MS. HARTNETT: Sure.

14 BY MS. HARTNETT:

15           Q    Have you given any prior testimony by 10:00:22  
16 declaration, report or oral testimony involving  
17 prepubertal transgender children?

18           A    I'm hesitating because I have written about  
19 informed consent and -- and that my writings about  
20 informed consent have covered all trans, beginning with 10:01:02  
21 prebu -- prepubertal children. But your question is  
22 about giving testimony about that. I would imagine  
23 that in the Younger I may have raised the issue of --  
24 of what we know -- I mean, I did raise tissue of what  
25 was known and what is not known. 10:01:38

1                   So I would imagine the answer to your question  
2   must be yes.

3                   And the Arizona case that is sealed is not  
4           about a preber -- prepubertal child. But, of course,  
5           in taking a history of any child in adolescence, we                   10:01:55  
6           certainly take histories of their prepubertal period  
7           and the behaviors evidenced during that time.

8                   So I just find the answer to your -- I'm not  
9       actually sure what the answer to your question should  
10     be. 10:02:13

11 Q Did the Younger case involve a prepubertal  
12 child?

13	A It did.
----	-----------

14 Q And the Arizona case did not involve a

15 preber -- prepubertal child; is that correct? 10:02:26

16 A That's -- that's correct.

17 Q And how about the Cincinnati case you  
18 mentioned, was that a prepubertal child?

19	A No.
----	-------

20 Q Can you think of any other -- and I'm setting 10:02:34  
21 aside your nonjudicial work, but any -- any  
22 testimony -- and I -- that was my question. Thank you  
23 for focusing on that -- but any testimony you've given  
24 other than these examples that you consider to be  
25 related to prepubertal transgender children? 10:02:57

1           A    The key word to your question is "testimony."  
2   And so I have played -- I have -- I have offered  
3   opinions to lawyers that never rose to the point of  
4   testimony. So the --

5           Q    And let me be clear. 10:03:25

6           A    The answer to your question must be no.

7           Q    And for this question, I was just trying to be  
8   clear when I said "testimony," whether by written  
9   declaration, written report or oral testimony.

10           And so I want to -- just using that 10:03:41  
11   understanding of "testimony" for this question, other  
12   than the Younger case, have you given any prior  
13   testimony regarding a prepubertal -- in a case  
14   involving a prepubertal transgender child?

15           A    I'm trying to be helpful and -- and 10:03:55  
16   informative to your question.

17           I think the -- I think the -- the -- to the  
18   best of my knowledge, the answer is no, but people use  
19   my knowledge, in my previous publications, and call me  
20   sometimes and ask me opinions about matters -- the 10:04:24  
21   lawyers, I mean, or guardian ad litem persons -- and --  
22   but it's not testimony per se. I guess it would be  
23   consultation.

24           Q    Thank you. And then just again sticking with  
25   testimony, which for this question I'm meaning to be 10:04:52



1 written or oral testimony in a judicial proceeding,  
2 have you given any testimony about a case involving a  
3 transgender adolescent, other than the Arizona case and  
4 the Cincinnati case?

5 A At the moment, I can't think of any. 10:05:21

6 Q And have you -- and this is, again, for the  
7 purposes of this questions meaning -- "testimony" to  
8 mean written or oral testimony in a judicial  
9 proceeding. Have you ever given testimony in support  
10 of a transgender party? 10:05:40

11 A In support of a transgender what?

12 Q Party.

13 A Party. Please repeat that question.

14 MS. HARTNETT: Could the reporter read that  
15 back. I'm not sure I could do it. 10:05:50

16 (Record read.)

17 THE WITNESS: I guess the key word in your  
18 question is "support." And I want you to know that  
19 when I testify about the state of knowledge, I actually  
20 think that because my perspective is a long-term life 10:06:48  
21 cycle perspective, I think of that my knowledge base  
22 sometimes suggests that I'm actually being quite  
23 supportive in -- in trying to have people understand  
24 what the consequences of -- of, quote, affirmative or  
25 supportive care actually may mean, what the risks are. 10:07:11

Page 46

1           So I believe your understanding of the word  
2       "support" is different than my understanding of the  
3       word "support."

4           But once again, I want to repeat, I  
5       conceptualize what I'm doing is accurately stating the       10:07:32  
6       state of science, of what is known, what is not known  
7       and what we need to do in order to get the answers to  
8       the unknown questions. That's what I'm doing.

9           I'm not supporting this or supporting that.  
10       I'm not against this. I'm not against that. I'm       10:07:52  
11       trying to give an appraisal of what we know, in a  
12       scientific sense. Because of the one principles of  
13       medical ethics is that science should lead our  
14       therapeutics.

15       BY MS. HARTNETT:   10:08:07

16           Q     Dr. Levine, you understand that your testimony  
17       in this matter has been provided by the State, the  
18       defendants, in support of their position; is that  
19       correct?

20           A     Yes.   10:08:15

21           Q     And so when I use the word "in support of," in  
22       the context of a judicial proceeding, you understand  
23       that your testimony, what has been submitted in these  
24       proceedings, is submitted in support of one party or in  
25       support of another party; correct?                               10:08:36

1           A     Yes. But that has to do with legal processes.  
2     What -- what I am supporting is to inform the court of  
3     what is known and what is not known. If you were to  
4     hire me to tell what -- the Court what is known and not  
5     known, I think I would be giving the same testimony.           10:08:58

6           Q     Let me ask you again, then. Which of -- have  
7     you ever previously given written or oral testimony  
8     that was submitted in support of the transgender party  
9     in a judicial proceeding?

10           MR. BROOKS: Objection.                                   10:09:16

11           THE WITNESS: You asked that question before,  
12     so I'm going to answer it in the same way I answered it  
13     before. It depends on your notion or my notion of  
14     "support."

15           BY MS. HARTNETT:   10:09:36

16           Q     I'm using the notion of "support" that we just  
17     discussed, which is -- like, for example, your  
18     testimony in this matter is being submitted in support  
19     of the defendants. You understand that?

20           A     I do.   10:09:44

21           MS. DENIKER: This is Susan Deniker. I just  
22     want to place on the record an objection to the form.

23           BY MS. HARTNETT:

24           Q     And using that understanding of "support," do  
25     you agree with me that you have not previously had your       10:10:00

1 testimony submitted in a judicial proceeding in support  
2 of the transgender party; correct?

3 MR. BROOKS: Objection.

4 THE WITNESS: Incorrect. I already told you  
5 that I have recommended transfer to a female prison and 10:10:10  
6 ultimate sex reassignment surgery and that -- for --  
7 for the Soneeya case, and there were -- there was  
8 another case -- another prisoner at the same time that  
9 we made the same recommendation for.

10 And I've already told you that I have -- I -- 10:10:33  
11 I -- I have participated in the support of -- of  
12 bilateral mastectomies for female prisoners, but  
13 that -- none of those cases have gone to court. So  
14 I -- I guess that's not relevant to your question.

15 BY MS. HARTNETT: 10:10:51

16 Q Right. I was asking about whether you've  
17 submitted, in a judicial proceeding, an opinion on the  
18 side of the transgender party. Have you?

19 MR. BROOKS: Objection.

20 THE WITNESS: I already answered that question 10:11:10  
21 three times about Soneeya.

22 BY MS. HARTNETT:

23 Q Can you please answer my question?

24 Have you ever submitted an expert opinion on  
25 the side of the transgender party? 10:11:20

Page 49

1 MR. BROOKS: Objection.

2 THE WITNESS: In your narrative --

3 BY MS. HARTNETT:

4 Q In a --

5 A In your -- 10:11:32

6 Q Sorry, I'm just trying to be really clear  
7 since I understand you're disputing the term "support,"  
8 which I thought was clear, but I -- I -- I'm listening  
9 to you, and now I'm asking you whether, in a judicial  
10 proceeding, you've ever submitted testimony on the side 10:11:43  
11 of the transgender person, the formal side of the case.

12 MR. BROOKS: Objection. Experts don't  
13 themselves submit anything in court.

14 You may answer, if you recall.

15 THE WITNESS: I may answer? 10:12:09

16 MR. BROOKS: If you recall.

17 THE WITNESS: I -- I find myself unable to  
18 answer that question.

19 MS. HARTNETT: Okay. I'm going to introduce  
20 an exhibit now, so we'll see how this Exhibit Share 10:12:22  
21 works for you. Just a moment here.

22 MR. BROOKS: Tell me when you've placed it in  
23 the folder, and I will then refresh the folder --

24 MS. HARTNETT: Will do.

25 We're starting with 86. Okay. Just one 10:12:49

Page 50

1 moment, please.

2 (Exhibit 86 was marked for identification  
3 by the court reporter and is attached hereto.)

4 MR. BROOKS: Are you doing all right, or do  
5 you want to take a break? 10:13:02

6 THE WITNESS: Well, she said we would have a  
7 break in an hour. It's a little over an hour.

8 MR. BROOKS: If you're -- you're about to  
9 introduce a document and you're taking a little time to  
10 get that straight, let's take a short break. 10:13:07

11 MS. HARTNETT: That works for me. Thank you.

12 MR. BROOKS: All right.

13 THE VIDEOGRAPHER: We're off the record at  
14 10:13 a.m.

15 (Recess.) 10:22:57

16 THE VIDEOGRAPHER: We are on the record at  
17 10:23 a.m.

18 BY MS. HARTNETT:

19 Q Now, Dr. Levine, you've been retained as an  
20 expert witness in this case, B.P.J.; correct? 10:23:20

21 A Correct.

22 Q Who retained you?

23 A Initially, David Tryon.

24 Q And was there someone who retained you after  
25 that? 10:23:37

1           A     I -- I think David Tryon, in the matter and  
2 means that I don't understand, created a liaison with  
3 Alliance for Defending Freedom, Mr. Brooks, and then  
4 they became -- so then I am -- I've been recruited by  
5 both Mr. Tryon and Mr. Brooks, their -- their                 10:24:10  
6 particular institutions.

7 Q And with respect to Mr. Brooks, he's  
8 affiliated with the Alliance for Defending Freedom, is  
9 that your understanding?

10	A Yes.	10:24:29
----	--------	----------

11 Q Have you previously worked with the Alliance  
12 for Defending Freedom on any matter?

13           A    Yes.  I -- I think of it as working with  
14   Mr. Brooks.

15 Q And I don't want to -- 10:24:45

16           A     Mr. Brooks is associated with the Alliance for  
17     Defending Freedom, so I guess the answer to your  
18     question is yes.

19 Q When did you first work with Mr. Brooks?

20	A	In the Young -- Young -- in the Younger case.	10:24:57
----	---	---	----------

21 Q And that was the Texas matter we discussed?

22	A Yes.
----	--------

23 Q And I think you testified in your deposition  
24 in the Claire matter, that's the Florida case, that you  
25 worked with a lawyer from the Alliance Defending 10:25:17



1 Freedom to write your report in Younger; is that right?

2 A In -- the question is a little confusing to me  
3 because you brought up the Florida case, and I don't --  
4 could you repeat the question and ask me just one  
5 question? 10:25:36

6 Q Sure. I was trying to orient you that I  
7 understand that you gave a deposition in that Florida  
8 matter of Claire; correct?

9 A I did.

10 Q And in that case, you were asked some 10:25:44  
11 questions about your report. Do you remember that?

12 A You mean my report in the Younger case?

13 Q Correct.

14 A I don't remember that. I'm not denying it,  
15 but I just don't remember that. 10:26:00

16 Q Yeah, was just curious about the kind of  
17 genesis of your report in this case, and so what -- I  
18 guess what I'll ask you is, is it -- is it fair to say  
19 that you worked with a lawyer from the Alliance for  
20 Defending Freedom to prepare your report in the Younger 10:26:14  
21 matter? Correct?

22 A Yes.

23 Q And then your report in the Claire matter in  
24 Florida was derivative of the Younger report; correct?

25 A I don't think that's correct. 10:26:27

1 Q What's not correct about it?

2 A I think the Florida case was about three --  
3 the plaintiffs, I think, were three adults. The  
4 Younger case was about, as we established before, a  
5 very young child. 10:26:53

6 Q Okay. So your testimony is that the report  
7 you submitted in the Claire case was not a derivative  
8 of the report that was submitted in Younger; is that  
9 right?

10 MR. BROOKS: Object to the form. 10:27:06

11 THE WITNESS: It's -- it's very difficult for  
12 a person like me to know how my clinical activities and  
13 my consulting activities interplay and influence one  
14 another.

15 I am a very busy person, doing a lot of 10:27:28  
16 different things, and I often think about, in a very  
17 pleasing way, how my various activities cross-fertilize  
18 my -- and stimulate my views, and what I read in one  
19 case for one particular matter may stay with me and  
20 help me understand yet another matter. 10:27:48

21 So this cross-fertilization is a very  
22 intellectually stimulating process, but it makes me  
23 very unable to answer the question about what  
24 influenced what. You know, sometimes I read a novel  
25 and it influences, I think. 10:28:08

1 But it's hard -- I -- I can't really track,  
2 with any degree of certainty, what influences what.

3 Perhaps if you had specific -- more specific  
4 questions, I may be able to give you an opinion. But  
5 based on what you just said, I -- I -- I'm at a loss to 10:28:29  
6 answer it definitively.

7 BY MS. HARTNETT:

8 Q So I think my -- just to be clear for the  
9 record, then, you cannot answer definitively whether  
10 the report you submitted in the Claire case was a 10:28:44  
11 derivative of the report that was done in the Younger  
12 case; is that fair?

13 MR. BROOKS: Objection; vague.

14 THE WITNESS: Based on how I currently think  
15 at the moment, I think it's correct. 10:28:59

16 BY MS. HARTNETT:

17 Q Sorry, correct that you -- you can't take a  
18 view on that?

19 A It is correct that I don't know whether the  
20 Younger case influenced my -- a specific -- I mean, 10:29:18  
21 I -- I probably wrote many, many pages for the Florida  
22 case, and so, you know, maybe there's a sentence or a  
23 paragraph or two that, in my mind, was conceptualized  
24 in part because of -- of my experience in the Younger  
25 case. 10:29:38

1 But at this moment, I cannot tell you  
2 definitively this influenced me or this did not  
3 influence me.

4 Number one, that was a couple of years ago.  
5 Lots of things have happened in my brain in the last 10:29:51  
6 couple of years.

7 Q Did any novels affect your expert opinion in  
8 this case?

9 A Not that I can think of.

10 Q You mentioned that you first encountered 10:30:03  
11 Mr. Brooks on behalf of ADF in the Younger case.

12 Can you tell me how you got connected with him  
13 in that matter?

14 A He called me. He had read two papers, I  
15 believe, that I had published, and he wanted to talk to 10:30:22  
16 me.

17 Q So for this case, B.P.J., what were you asked  
18 to do in terms of presenting an expert opinion?

19 A He wanted me to present the state of  
20 knowledge, what is known and what is not known, about 10:30:47  
21 trans care as a background for this particular case.  
22 But he was aware, and -- and I told him very clearly --  
23 that he was quite aware. I didn't have to tell him. I  
24 just reminded him that I am not an expert in the  
25 physiology of estrogen and testosterone blockages for 10:31:11

1 athletic capacities, I'm not an expert in lung volumes  
2 and cardiac capacities. And -- and I asked him why --  
3 why he would --

4 MR. BROOKS: I'm going to instruct you not to  
5 disclose the substance of conversations with your 10:31:28  
6 attorneys.

7 THE WITNESS: All right. Thank you.

8 BY MS. HARTNETT:

9 Q Was that a conversation you had before you  
10 were retained in this matter, Dr. Levine? 10:31:36

11 A Was that a conversation?

12 MR. BROOKS: Counsel, the -- the witness can  
13 answer that question, but any conversations surrounding  
14 the retention, I will instruct the witness not to  
15 answer. 10:31:53

16 THE WITNESS: I wondered why he needed my  
17 testimony in this case. He provided an answer for me.

18 BY MS. HARTNETT:

19 Q Do you view your testimony as relevant to this  
20 case? 10:32:07

21 MR. BROOKS: Objection.

22 THE WITNESS: Insofar as you make claims --  
23 you -- that your side may make claims that is not --  
24 that are not scientifically correct or established, it  
25 may very well be relevant. 10:32:29

Page 57

1 But that is not a question for me to decide.

2 That's a question for lawyers on both sides and for the  
3 judge.

4 Again, I'm just -- I'm just -- I just have a  
5 certain limited understanding and knowledge which I 10:32:44  
6 believe the Court might benefit from having.

7 BY MS. HARTNETT:

8 Q Did you prepare for the deposition today?

9 A Yes.

10 Q What did you do to prepare? 10:33:03

11 And please don't disclose your  
12 communications that you had -- the substance of the  
13 communications that you had with counsel.

14 A I reread my report Sunday evening. I met with  
15 counsel yesterday afternoon. 10:33:17

16 Q How long did you meet for yesterday afternoon?

17 A I'm sorry, how long, did you say?

18 Q Yes, how long did you meet with counsel  
19 yesterday afternoon?

20 A Between 1:30 and quarter to 7:00. 10:33:30

21 Q Did you review any documents to prepare for  
22 this deposition other than your expert report?

23 MR. BROOKS: And you -- you can answer that  
24 question yes or no without identifying specific  
25 documents. 10:33:44

Page 58

1 THE WITNESS: Yes.

2 BY MS. HARTNETT:

3 Q Did you review the rebuttal report of  
4 Dr. Safer?

5 MR. BROOKS: I'm going to instruct the witness 10:33:52  
6 not to answer questions about what specifically he  
7 reviewed with counsel yesterday.

8 MS. HARTNETT: I believe I have a right to  
9 know what, if any, additional documents he's reviewed  
10 before the deposition other than his report. 10:34:08

11 MR. BROOKS: On the contrary. I believe that  
12 selection is my work product. And I stand by my  
13 instruction.

14 BY MS. HARTNETT:

15 Q Outside the presence of your counsel, is there 10:34:15  
16 anything other than the expert report that you reviewed  
17 to -- before your deposition?

18 MR. BROOKS: On your own, outside our session  
19 yesterday, did you review anything else in preparation  
20 for your deposition? 10:34:32

21 THE WITNESS: No.

22 BY MS. HARTNETT:

23 Q Do any materials other than those cited in  
24 your expert report inform your opinion in this matter?

25 MR. BROOKS: Objection. 10:34:49

Page 59



1 THE WITNESS: As was -- if you have read my  
2 curriculum vitae, I have recently published two papers  
3 about issues. One is titled the Reflections of a  
4 Clinician about the trans -- the care of trans youth  
5 that was published in November, in the Archives of 10:35:19  
6 Sexual Behavior. And about 16 days ago, a new article  
7 appeared online about informed consent, Reconsidering  
8 Informed Consent in the Treatment of Trans Children,  
9 Adolescents, and Young Adults.

10 And so I can't really separate the processes 10:35:46  
11 of writing these papers from, you know, the submission  
12 of documents in this particular case.

13 But in a literal answer to your question, did  
14 I -- did I review any particular documents in -- in --  
15 in preparation for this testimony today, this 10:36:07  
16 deposition today? The answer is no. But the process  
17 of writing articles is a deep, you know, dive into all  
18 kinds of issues and -- so I'm busy with this -- these  
19 sub- -- these topic areas.

20 But I guess the answer to your question is no. 10:36:31  
21 BY MS. HARTNETT:

22 Q Thank you. And what I need to understand  
23 and -- and find a way to get that information from you,  
24 notwithstanding your counsel's objection, but he should  
25 make any direction he sees fit to make, in -- in your 10:36:46

1 expert report, you refer to certain materials in this  
2 case that you had reviewed as a basis for your opinion.

3 Do you recall that?

4 MR. BROOKS: Do you want to direct the  
5 witness's attention to what you're referring to? 10:37:03

6 MS. HARTNETT: Yeah, I can do that, I guess.

7 BY MS. HARTNETT:

8 Q You reviewed Dr. Adkins' and Dr. Safer's  
9 declarations before you -- as part of your materials  
10 that you rely on in your expert report; correct? 10:37:13

11 A Yes.

12 Q And what I'm trying to understand is whether  
13 or not you are going to rely on Dr. Adkins' or  
14 Dr. Safer's supplemental declarations as part of your  
15 expert opinion in this matter. 10:37:29

16 MR. BROOKS: Counsel, let me -- I'll object  
17 and, I think, make a suggestion.

18 The -- is your question whether he has  
19 considered those rebuttal reports submitted by  
20 Dr. Adkins and Safer? Or did you mean something else? 10:37:47

21 MS. HARTNETT: I would like to know if he has  
22 reviewed the expert -- supplemental expert report of  
23 Dr. Adkins.

24 Will you allow him to answer that question?

25 MR. BROOKS: I will. 10:38:02

1 THE WITNESS: I think at one point I did.

2 BY MS. HARTNETT:

3 Q Do you understand that Dr. Adkins wrote an  
4 initial report and then a rebuttal, including to your  
5 report?

10:38:13

6 A Yes.

7 Q Have you reviewed Dr. Adkins' rebuttal,  
8 including to your report?

9 A Not -- not in preparation for this deposition,  
10 no.

10:38:23

11 Q And did you review Dr. Safer's rebuttal  
12 declaration in this case, ever?

13 A I think I have. Yes, I --

14 Q And have you --

15 A I --

10:38:36

16 Q Okay.

17 A I have, yeah.

18 Q And have you reviewed the declaration of  
19 Aron Janssen in this matter?

20 A Of Aron who?

10:38:43

21 Q Janssen.

22 A I can't recall that. I may have.

23 Q He's a physician at Chicago Children's  
24 Hospital. Is that ringing a bell?

25 A No.

10:39:02

Page 62

1 Q Okay.

2 A It's ringing a faint bell.

3 Q All right. If you could go into your "Marked  
4 Exhibits," there should now be a marked Exhibit 86.

5 MR. BROOKS: I have that on the screen. 10:39:23

6 MS. HARTNETT: Thank you, Roger.

7 And this is a document that starts with the  
8 page that says "Exhibit A," and then it goes on to --  
9 it's an attached expert declaration.

10 BY MS. HARTNETT: 10:39:38

11 Q Do you see this document, Dr. Levine?

12 A We're scrolling through it here.

13 Expert declaration of Dr. Levine. Robert  
14 Ferguson -- Tingley, yeah, okay.

15 Q And so what -- what is this document, if you 10:39:54  
16 know?

17 A This is something I submitted several years  
18 ago of -- I think it was about an attempt to censor a  
19 psychologist who wanted to provide a certain  
20 exploration with a patient, and -- and so I was 10:40:19  
21 offering an opinion about, I guess, the  
22 psychotherapeutic evalua- -- the evaluation of  
23 psycho- -- the psychotherapeutic processes involving  
24 patients.

25 Q And just turning to page 2 of this document, 10:40:38

Page 63

1 do you see it says -- are -- are you on page 2 of the  
2 PDF?

3 A Let's see. How do I know that?

4 Q The page after the page that says "Exhibit A."

5 A I -- I'm on the page that is the title page 10:40:54  
6 that says, Expert Declaration of Dr. Stephen Levine.

7 Q And, Dr. Levine, the caption of this page says  
8 "Expert Declaration of Dr. Stephen B. Levine in Support  
9 of Plaintiff's Motion for Preliminary Injunction";  
10 correct? 10:41:14

11 A Correct.

12 Q And I know we had some discussion before the  
13 break about what the word "support" means. In this  
14 case, did you understand that your declaration was  
15 being submitted in support of the plaintiff challenging 10:41:25  
16 the practice that you were referring to?

17 A I guess I now understand that, yes.

18 Q Okay. And just flashing back to the end of --  
19 this is a declaration that was submitted in a matter in  
20 court in Washington State. 10:41:46

21 Do you see that?

22 A Yes.

23 Q And then at the -- it's -- you can page  
24 through, but it appears that you signed this  
25 declaration on May 10th, 2021; is that correct? 10:41:57

Page 64

1 MR. BROOKS: Well, we'll go to the end and see  
2 what we see.

3 THE WITNESS: Let's see. May 2021.

4 BY MS. HARTNETT:

5 Q Okay. And what -- what, if any, additional 10:42:17  
6 involvement have you had with the Tingley matter other  
7 than submitting this declaration?

8 A I think none.

9 Q Okay. Now, just turning back to the first  
10 page or any page, frankly, in this document, you can 10:42:41  
11 see there's a caption on the top of the page there.

12 Do you see "Case 2:21-cv-00316"? Do you see  
13 that?

14 A Yes.

15 Q And that, I would represent, is the caption 10:42:51  
16 for the current case, B.P.J.

17 And this was Exhi- -- this -- this  
18 declaration, the version that I put before you, is  
19 actually the version that was attached in opposition to  
20 plaintiff's motion for preliminary injunction in this 10:43:11  
21 case.

22 Did you have an understanding that your  
23 declaration from the Washington case was going to be  
24 submitted as an attachment in support of the defendants  
25 in this matter at the preliminary injunction stage? 10:43:25

Page 65

1 MR. BROOKS: Objection.

2 THE WITNESS: No.

3 BY MS. HARTNETT:

4 Q Were you asked to -- for permission before the  
5 defendants in this case attached your Washington 10:43:44  
6 declaration to the opposition to the preliminary  
7 injunction motion in this case?

8 A No.

9 Q Do you recall whether you were asked to submit  
10 an expert declaration at the preliminary injunction 10:43:58  
11 phase of this case?

12 A Would you clarify that question? I'm not  
13 exactly sure what you're asking.

14 MS. HARTNETT: Could the reporter read back my  
15 question. 10:44:29

16 (Record read.)

17 MR. BROOKS: Objection.

18 THE WITNESS: I don't know what the  
19 preliminary injunction phase was. I don't know the --  
20 who the implied person who might have asked me. I -- 10:44:38  
21 I -- I'm -- I'm a psychiatrist. I am not a -- I'm not  
22 very knowledgeable about your -- about the law and the  
23 legal processes.

24 So I -- I just can't answer the question  
25 because I don't I understand the terms. 10:44:56

Page 66



1 Perhaps you can simplify the question for me.

2 BY MS. HARTNETT:

3 Q What I'm trying to understand -- and thank you  
4 for -- for that.

5 I'm trying to understand whether you are aware 10:45:09  
6 that your declaration from the Tingley matter was  
7 submitted in opposition to the plaintiff's motion for  
8 preliminary injunction in this case.

9 MR. BROOKS: Objection; asked and answered.

10 THE WITNESS: I thought I already answered 10:45:23  
11 that question.

12 By MS. HARTNETT:

13 Q Okay. Right. And you said, I think, that you  
14 were not aware. And then what I'm asking you is, were  
15 you asked to prepare a declaration specifically for 10:45:30  
16 this case at the preliminary injunction phase?

17 MR. BROOKS: Objection; asked and answered.

18 THE WITNESS: Again, I don't know the phases  
19 of this case. And the preliminary injunction phase  
20 is -- I don't understand specifically what that means 10:45:49  
21 in terms of the long process of adjudication in this  
22 case.

23 I was asked to submit a report for this case,  
24 but I was not told it was for a preliminary injunction  
25 or what- -- an injunction that's not preliminary. 10:46:05

Page 67

1 I simply don't know the answer to your  
2 question.

3 BY MS. HARTNETT:

4 Q Thank you. When were you retained in this  
5 case, B.P.J.? 10:46:15

6 MR. BROOKS: Objection.

7 If you recall.

8 THE WITNESS: I presume it was sometime in  
9 2021, but I don't recall the specific date. I -- you  
10 know, I could find out, but right now, I -- I -- I 10:46:33  
11 can't tell you a specific date. I would presume in the  
12 last half of 2021.

13 BY MS. HARTNETT:

14 Q Do you have any objection to your declaration  
15 from one case being submitted in another case without 10:46:51  
16 your approval?

17 MR. BROOKS: Objection.

18 THE WITNESS: Personally do I have an  
19 objection for people using my previous testimony? Yes.  
20 I don't -- I don't think that's fair to me because 10:47:06  
21 every case is somewhat different. And it feels like  
22 it's my work product and that -- but the truth is that  
23 I'm naive about the -- about the legal processes, and I  
24 think when -- the first time I submitted an expert  
25 opinion report, I was shocked that people had read it 10:47:30

Page 68

1       who weren't involved in the case.

2               So there was this problem with Dr. Levine not  
3       being a forensic psychiatrist, just did not understand  
4       about what is public and what is not public when it  
5       comes to legal documentations. 10:47:51

6               I think I subsequently learned that -- that  
7       lots of people read my reports who have nothing to do  
8       with the matter at hand because lawyers are looking for  
9       experts and precedents and so -- and arguments and so  
10      forth. 10:48:12

11              So in a -- in a personal sense, I have some  
12      kind of objection to that. It doesn't feel fair to me,  
13      but it's also a reflection of my naivety about this --  
14      my past naivety about this matter -- about legal  
15      matters. 10:48:28

16      BY MS. HARTNETT:

17              Q     Thank you. I have added a different --  
18      another exhibit that I would like to introduce into the  
19      folder, if you could refresh.

20              MR. BROOKS: 87? 10:48:44

21              MS. HARTNETT: That's correct.

22              MR. BROOKS: Shall I open that now?

23              MS. HARTNETT: Yes, if you would.

24              (Exhibit 87 was marked for identification  
25      by the court reporter and is attached hereto.) 10:48:48

Page 69

1 BY MS. HARTNETT:

2 Q And, Dr. Levine, I've marked as Exhibit 87  
3 your expert report and declaration in this matter dated  
4 February 23rd, '22.

5 Could you please just take a moment to look 10:49:04  
6 through the document.

7 MR. BROOKS: Well, Counsel, the document, I  
8 think we'll all agree, is perhaps, what, 70-some pages  
9 long, plus bibliography.

10 Would you -- what do you mean by asking the 10:49:17  
11 witness to look through the document?

12 MS. HARTNETT: I was just giving him the  
13 courtesy of making sure he agrees it's his expert  
14 report.

15 THE WITNESS: Well, my -- my signature is on 10:49:28  
16 the first page.

17 BY MS. HARTNETT:

18 Q Excellent. So what is this document,  
19 Dr. Levine?

20 A Well, I believe it is the report that I 10:49:34  
21 submitted at the end of February about -- in this  
22 matter.

23 Q Okay. And did you prepare this report?

24 A Yes.

25 Q And do you notice that this one has the 10:49:50

Page 70

1 caption for this case on it, on the first page;

2 correct?

3 A It does, yeah.

4 Q How much time did you spend preparing this

5 report? 10:50:06

6 A I could -- I would say approximately 20 to

7 25 hours. I would say closer to 25 hours.

8 Q And were you -- as a basis for this report,

9 did you use a kind of prior report that you had

10 submitted in a different case? 10:50:35

11 A Yes.

12 Q What was the basis -- like, the prior report

13 that you used as a basis for this report?

14 A Well, as I've told you already, I have

15 provided reports about the nature of what is known and 10:50:51

16 what is not known in a scientific sense about this

17 whole matter and -- so that's just part of my thinking.

18 And one report is a sort of modern refinement of a

19 previous report that -- that is selected, added to or

20 deleted from based upon the relevance to the case in 10:51:22

21 point.

22 So every -- every submission that I have made,

23 in a sense, has contributed to the -- to this current

24 report with the understanding that things have been

25 added and things have been deleted every time that I -- 10:51:44

Page 71

1 I submit a report for a case.

2 I hope that's an answer to your question.

3 Q Thank you, yes. I guess what I'm trying to  
4 get at is was there a particular past report that you  
5 used as a template to work from as you made your 10:52:03  
6 refinements and edits for this report?

7 A No. That's -- that's -- I think the answer is  
8 my -- my -- my knowledge -- my -- I think the answer is  
9 to all, all my reports. I guess the answer to your  
10 question is no, there's not a particular one, but there 10:52:38  
11 are a series of reports, and I sometimes will select  
12 from various reports.

13 Well, for example, this -- the -- the simplest  
14 thing is if -- in the beginning of the report, when I  
15 provide my credentials, for much of that, there is a 10:52:58  
16 cut and paste phenomenon and -- and it doesn't much  
17 matter which report I cut and paste from, but I only  
18 added to it or subtract to it depending on, I think,  
19 the relevance.

20 So, for example, if you looked at my report on 10:53:20  
21 the North Carolina matter, probably there's much  
22 similarity in the beginning of the report.

23 Q Thank you. So this document indicates that  
24 the -- at least by my reading of it -- the only  
25 documents specific to this case, B.P.J., that you 10:53:39

1 reviewed in preparing your report were the Adkins  
2 declaration and the Safer declaration; is that correct?

3 A I think so.

4 Q Are you familiar with the concept of a  
5 reasonable degree of scientific certainty? 10:53:57

6 A I hear it as "medical certainty." Is this a  
7 reasonable degree -- can you offer this with a  
8 reasonable degree of medical certainty, Doctor? And  
9 when I've asked what that -- what that meant, I've been  
10 told 51 percent certainty. 10:54:17

11 Q Okay. What is your understanding of -- so  
12 your understanding of a reasonable degree of medical  
13 certainty means 51 percent certainty?

14 A No. I think that's my understanding of the  
15 legal definition of medical certainty. My clinical 10:54:35  
16 idea and my scientific idea would be very different.

17 I -- I often smile when I think that -- if I'm  
18 correct -- that in the legal world, medical certainty  
19 refers to 51 percent.

20 Q And what is, in contrast, your clinical 10:54:58  
21 standard that you were referring to?

22 A Repeat that, please. What is what?

23 Q The -- I think you were contrasting it with a  
24 clinical standard; is that correct?

25 A Right. Oh, clinical or scientific. 10:55:14



1           You know, in -- in science, we have -- in  
2     clinician, we have the idea of what is the risk of a  
3     false positive and what is the risk of a false  
4     negative, and it's a complicated statistical balance  
5     between the ability to get it right or to get it wrong.     10:55:31

6           And I am -- I am one who is very humbly  
7     impressed by the inability to be certain about things,  
8     and I distrust certainty because facts change in  
9     medicine.

10           And -- and if I could just tell you a -- an     10:55:52  
11     experience that I've had. As a young person, I was  
12     interested in becoming a physician, and I went to a  
13     premed program at the University of Pittsburgh, and  
14     somebody in that program held up Harrison's textbook of  
15     medicine, which requires considerable arm strength to     10:56:13  
16     lift over your head because it's probably, you know,  
17     900 to a thousand pages. And he said, This is what you  
18     have to learn when you're in medical school, by the  
19     time you graduate medical school. I want to tell you,  
20     ladies and gentlemen, that 90 percent of the things in     10:56:33  
21     this book are probably not true. They probably will  
22     not prove to be true in time. The trouble is I and  
23     other people in medicine can't tell which of the  
24     10 percent -- which of the facts are correct and which  
25     of the facts are not. This is the nature of medical     10:56:48

1 science as it -- and clinical science as it moves  
2 forward. We have, at any given time, a set of facts, a  
3 set of principles and -- and controversy occurs, people  
4 disagree and studies are done, and the facts disappear  
5 and new facts take their place. 10:57:12

6 That was my introduction to medical science.

7 And as I've spent most of my -- the majority  
8 of my years in this field, I still believe that that  
9 little example remains to be -- remains salient and  
10 something that all of us need to remember. 10:57:32

11 And so I say to you, 51 percent medical  
12 certainty is a joke to me. It -- it -- I always smile.

13 Q Thank you. That -- that's helpful.

14 If we could just go through your CV attached  
15 to your report, we can -- I have a few questions on 10:57:52  
16 that, and then I'll turn to your report.

17 You'll have to page down a bit. It starts  
18 repaginating about page -- after page 81.

19 MR. BROOKS: We are at the beginning of where  
20 it says "Brief Introduction," "Curriculum Vita." 10:58:20

21 MS. HARTNETT: Okay. Thank you.

22 BY MS. HARTNETT:

23 Q Dr. Levine, is this your CV?

24 A It is.

25 Q Are you aware of anything, sitting here today, 10:58:27

Page 75

1 that needs to be updated or corrected?

2 A Probably if you scroll to the end of the  
3 articles, article 151 -- publication 151.

4 MR. BROOKS: We're scrolling. We're  
5 scrolling. 10:58:51

6 MS. HARTNETT: I think it might be 147.

7 MR. BROOKS: There's a lot. Pardon me. 86.  
8 Here we are at -- just before --

9 THE WITNESS: Oh --

10 MR. BROOKS: -- where it says "Book Chapters." 10:59:00

11 THE WITNESS: I'm sorry, 147. 147 is -- I  
12 can -- you know, today -- if I were to give you my CV  
13 today, I would give you the exact citation of that  
14 article.

15 And if we scroll down to the end of the CV, I 10:59:34  
16 will show you something else.

17 MR. BROOKS: I'm not sure there's a further  
18 question --

19 THE WITNESS: Oh.

20 MR. BROOKS: -- pending. 10:59:46

21 Or is there a question pending?

22 MS. HARTNETT: Well, yeah, I can -- I can ask  
23 one.

24 BY MS. HARTNETT:

25 Q So I take it that 147 has now been published. 10:59:51

1 Is that the difference?

2 A Yes.

3 Q Did you -- is there a -- a more updated  
4 version of your CV that goes up to 151?

5 A I think last week, I -- I rearranged the 11:00:03  
6 numbers and somehow -- I may be -- I may -- I may not  
7 be accurate at 151.

8 Q Okay. And then 146 there is what you were  
9 talking about earlier, the November piece about the  
10 reflections on a clinician's role? 11:00:26

11 A Yes.

12 Q Thank you. And is there anything further on  
13 here you'd like to draw my attention to is in need of  
14 updating?

15 A I don't know if -- if this -- this thing has 11:00:40  
16 a -- this CV has a -- my -- a podcast I participated  
17 in. I never -- unlike many of my colleagues, I never  
18 put in my CV the talks I give and the -- you know, and  
19 now there's this whole thing about podcasts. I -- I  
20 gave a -- I didn't -- I was invited to give a podcast 11:01:04  
21 recently and -- so I think it's on my CV, but I'm not  
22 sure.

23 Q That was in January of this year?

24 A Was it in January? It was -- it was within  
25 several months ago, yeah. 11:01:20

Page 77

1 Q Have you given any podcasts other than the one  
2 you gave in January of this year?

3 A The -- the answer to that question is I don't  
4 know. I mean, sometimes people come and talk to me  
5 and -- and film me on camera and I never know what 11:01:46  
6 happens to -- what hap- -- what -- what -- that  
7 happens. I never know what happens to it.

8 Q Are you aware of any other -- sorry.

9 A The answer to your question is I'm not aware  
10 that I have been in any other podcast, but, you know, 11:02:04  
11 you may dig up some other conversation that is -- that  
12 I've had somewhere along the line.

13 Q Thank you. If we could just turn back to the  
14 first page of your CV, I would appreciate it.

15 Let me know when you're there. 11:02:26

16 MR. BROOKS: Yeah. We're there.

17 MS. HARTNETT: Okay.

18 BY MS. HARTNETT:

19 Q So on page 1, it notes that you are -- board  
20 certified in -- in June of 1976; correct? 11:02:39

21 A Yes.

22 Q In neurology and psychiatry; is that correct?

23 A That's the name of the board that  
24 psychiatrists get certified in. It's a little bit of a  
25 joke that I'm -- that any psychiatrist is certified as 11:02:59

Page 78

1 a neurologist.

2 Q Have you been recertified with that  
3 certification?

4 A No. I don't need to be. I'm grandfathered  
5 in, as they say. 11:03:13

6 Q Thank you. Do you have any other board  
7 certifications?

8 A No.

9 Q So you are not board certified in child and  
10 adolescent psychiatry; correct? 11:03:27

11 A No, I'm not board certified.

12 Q Do you have any specialized training in child  
13 development?

14 A Yes.

15 Q Can you describe that? 11:03:36

16 A I'm a psychiatrist. All psychiatrists are  
17 trained in child development. I, in particular, have  
18 been interested in the whole process of adult -- of --  
19 of development throughout the life cycle and have -- I  
20 think I quoted in my expert opinion report that 11:03:57  
21 Tom Insel, who was the head of the NIH, NIMH, said that  
22 75 percent of adult psychopathology, that is, suffering  
23 as a result of mental disorders, have their origins in  
24 childhood.

25 So it's hard for me to conceive that any -- 11:04:16

1 any -- any psychiatrist is not knowledgeable about the  
2 processes of growing from birth to death. And I, in  
3 particular, am interested in that process. I often say  
4 to my -- to other people that I -- development is my  
5 field. In fact, when -- when people talk about 11:04:40  
6 psychoanalysis and psychodynamic psychiatry, I like to  
7 rephrase those terms as developmental psychology.

8 Q Thank you. I just -- my -- my question,  
9 though, was whether you have any specialized training  
10 in child development. 11:04:57

11 Do you have any specialized training?

12 A Well, of course, I rotated through child  
13 psychology when I was a resident. For the purpose- --

14 Q Anything else?

15 A For the purposes of questioning my expertise, 11:05:12  
16 I have no specialized credentialed, certificated  
17 training in child psychi- -- in -- in child  
18 development.

19 However, what I'm saying to you is that my  
20 understanding of being a psychiatrist and listening to 11:05:27  
21 people's stories about their development all day long,  
22 I don't need a special certificate to testify that I am  
23 trained in -- in -- in child, adolescent, young adult,  
24 middle-aged and older-aged development.

25 Q And would the answer be the same if I asked 11:05:49



1     you whether you had any specialized training in -- in  
2     children or adolescents with gender dysphoria?

3           A     Specialized training? I was in on the ground  
4     floor of these things when there was no specialized  
5     training. I was part of the -- I was part of the           11:06:12  
6     process that was trying to figure out what this all was  
7     about, you see. And --

8           THE WITNESS: Sorry.

9           -- I very much object to that term  
10    "specialized training" because I have an understanding    11:06:30  
11    of what that really -- the connotation of that term is,  
12    and I don't accept that -- the legitimacy of  
13    specialized training.

14           I feel what you may mean is indoctrination  
15    training. I'm -- I like to distinguish between           11:06:50  
16    indoctrination and education.

17    BY MS. HARTNETT:

18           Q     Are you an endocrinologist?

19                   Are you an endocrinologist?

20           A     No.   11:07:17

21           Q     And you would not hold yourself out as an  
22    expert in endocrinology; correct?

23           A     I'm not an expert in endocrinology.

24           Q     And are you an expert in sports medicine?

25           A     No, I'm not an expert in sports medicine.    11:07:33

1 Q Are you an expert in athletic performances?

2 A I've already testified to that. The answer is  
3 no.

4 Q Yeah, I'm asking because I think your attorney  
5 at some point indicated that might be part of your 11:07:44  
6 privileged conversation. That's why I'm asking you  
7 again.

8 Do you have any -- have you ever had any  
9 complaints made against you related to your medical  
10 practice? 11:07:56

11 A Yes.

12 Q Could you tell me about those?

13 A Yes. We had a trans adult who wanted  
14 hormones, and I was supervising a psychology intern,  
15 and the -- we decided the person was mentally unstable 11:08:17  
16 and was not in a position to be given hormones just  
17 yet, and the patient threatened to murder the  
18 psychology intern who told her that -- who told the  
19 patient that answer.

20 And I -- when she told me that, I went in and 11:08:36  
21 I saw the patient, and I told the -- and I discharged  
22 the patient. And I said that patients have obligations  
23 and doctors have obligations and you have justified the  
24 rule, you have crossed over the line, and I cannot  
25 allow you to continue to get care here. 11:08:59

Page 82

1           The patient then left and then reported me to  
2           the State Medical Board, and the State Medical Board  
3           investigated and -- and found -- and found that I was  
4           perfectly justified in what I did.

5           That is the only awareness that I have of --           11:09:21  
6           of complaints to the State Medical Board about my work.

7           Q    Thank you. Just back to the point, we -- we  
8           were discussing the notion of specialized training a  
9           minute ago.

10          Do you recall that?                                   11:09:40

11          A    I recall.

12          Q    So do you -- do you accept the legitimacy of  
13          the notion of specialized training in child and  
14          adolescent psychiatry?

15          A    For people who are interested in having a more   11:09:58  
16          extensive experience and plan to spend their lives with  
17          young -- young people only or primarily, I think it's a  
18          fine thing to -- to -- to -- it's just one of the many  
19          houses in the big -- in the mansion of medicine and one  
20          of the -- one of the subspecialties in psychiatry. I   11:10:20  
21          have no objection to people becoming child and  
22          adolescent psychiatrists.

23          Q    And just to be clear, that's not a specialty  
24          of yours; correct?

25          MR. BROOKS: Objection.                               11:10:40

1 THE WITNESS: It's not formally. I -- I don't  
2 define myself as a board-certified child and adolescent  
3 psychiatrist, but I do define myself as a psychiatrist.

4 And as -- as I've already stated, I believe  
5 that psychiatrists, over the -- during the course of 11:10:51  
6 their training and -- that is, their initial education  
7 and their subsequent life education, practicing  
8 psychiatry, comes to understand or should come to  
9 understand the influence of childhood positive and  
10 negative experiences on their subsequent mental life 11:11:09  
11 and behavioral life.

12 BY MS. HARTNETT:

13 Q In your mind, are the concepts of having an  
14 understanding of child psychology and actually working  
15 with child patients distinct notions? 11:11:25

16 A Well, I think they're -- they are to be  
17 separated. One's -- one's theoretical understanding of  
18 the processes of development, the stages of development  
19 and understanding childhood adversities that -- that we  
20 hear about all the time from adolescents and from 11:11:49  
21 adults, that's different than actually, you know,  
22 seeing five-year-old children or six-year-old children.

23 So I make a distinction between that, sure.

24 Q And how much of your practice throughout your  
25 career has involved actually seeing children or 11:12:12

1 adolescent patients?

2 A Well, I -- I spend a lot of time with  
3 adolescent patients, and I spend much less time with --  
4 with children per se. I spend an enormous amount of  
5 time talking about children to their parents. I mean, 11:12:30  
6 conversations about childhood are about the -- my -- my  
7 older patients, about their childhood, and the parents  
8 that I see about their children's processes, that's  
9 a -- I would say a daily occurrence in my practice.

10 Q How many child patients have you had in your 11:12:56  
11 career?

12 MR. BROOKS: Objection; vague.

13 THE WITNESS: I -- I would have a very hard  
14 time answering that question. I've had -- you know,  
15 when -- when parents talk to me about their children, 11:13:26  
16 for insurance purposes, the patient is the mother or  
17 father or both; right? But the subject of our  
18 conversation is the child.

19 So I don't know -- you see, and one of the  
20 therapeutic activities that I do, I call "parent 11:13:47  
21 guidance." And so parent guidance involves the focus  
22 on the child's environment and how to improve the  
23 child's anxiety problems or whatever, you see.

24 So I don't know if I -- if that constitutes  
25 how many children. Can I answer that question in terms 11:14:08

1 of parent guidance?

2 I have a pediatrician, for example, as an  
3 adult patient now, and he and I have spent a lot of  
4 time talking about his daughter and -- and some of the  
5 things I've said to him have really helped his daughter 11:14:25  
6 overcome a problem. But he's my patient, you see.

7 I don't -- so I can't answer your question  
8 with numerical terms and --

9 BY MS. HARTNETT:

10 Q Children can be patients; correct? 11:14:39

11 A Children can be patients, certainly.

12 Q And so I'm just asking you how many actual  
13 children patients you've had over your career, if you  
14 could estimate that.

15 MR. BROOKS: Objection; vague as to the term 11:14:51  
16 "children."

17 THE WITNESS: Can you clarify whether -- what  
18 a child is versus what a teenager is?

19 BY MS. HARTNETT:

20 Q Yeah, I'll ask you for two categories. 11:15:04

21 I'll ask you for prepubertal children.

22 How many prepubertal children have you had as  
23 a patient in your career, approximately?

24 A And if I saw that prepubertal child one time,  
25 would that -- would that constitute a patient? 11:15:20

Page 86

1 Q Why don't you give me your estimate of how  
2 many prepubertal children you've ever seen as patients,  
3 and then we can ask more questions.

4 A I would say a handful. Six.

5 Q And how many of those -- of those 11:15:35  
6 approximately six did you see more than one time?

7 A I can't recall one.

8 Q And then I'll ask the same question about  
9 adolescents, which I'll mean minors from puberty  
10 through being a minor. 11:16:00

11 How many adolescent patients have you had in  
12 your career, approximately?

13 A 50.

14 Q And how many of those have you seen more than  
15 once? 11:16:14

16 A Most.

17 Q And were most of those, of the adolescent  
18 patients you've seen, late adolescence?

19 A No.

20 Q Turning back to your CV, you list yourself -- 11:16:27  
21 you're listed as a clinical professor at Case Western  
22 Reserve University School of Medicine; correct?

23 A Yes.

24 Q Do you work at Case Western Reserve University  
25 School of Medicine full-time? 11:16:51



1 A No. No.

2 Q When did you stop working full-time?

3 A In 19- -- November 1992.

4 Q Are you currently teaching any classes at

5 Case Western? 11:17:09

6 A I've never taught classes per se. That's not

7 how my teaching has ever been. If you think about a

8 college course, I have never -- I don't teach college

9 courses or graduate school courses. I provide seminars

10 sometimes. I've written articles about the sex 11:17:32

11 education of doctors and -- so over the years, I've

12 taught a number of seminars to our residents in

13 psychiatry. I teach -- I give workshops.

14 I recently, for example, gave a

15 four-hour work- -- a four-hour workshop at the Harvard 11:17:59

16 student health service for their mental health

17 professionals where I presented, you know, ideas to

18 them, and we had discussions.

19 So I teach -- I teach sometimes by giving

20 grand rounds. I -- there -- there is a named 11:18:20

21 lectureship in my honor at Case Western Reserve, and

22 once a year, I invite someone to give a talk from

23 another university about some sexual topic.

24 So I have residents who come to spend --

25 for -- I can't -- for probably -- probably -- since 11:18:44

Page 88

1 1992, 1993, I've always had a resident with me who  
2 comes and sees my patients with me, and they usually  
3 spend six months with me, sitting in and seeing my  
4 patients together.

5 So my teaching is not in the classic sense 11:19:03  
6 that -- that the average layperson would think of  
7 teaching classes. It's -- it's much more -- you know,  
8 coming in and seeing how an older doctor does work,  
9 has, quote, therapy.

10 I also, since 1977, have led two clinical case 11:19:26  
11 conferences a week, and residents and medical students,  
12 depending on the year, medical students, residents and  
13 members of the community come in to those conferences  
14 and we discuss cases.

15 So I have multiple avenues, multiple ways of 11:19:45  
16 being a teacher, but none of them are through  
17 coursework per se.

18 Q Thank you.

19 A I forgot to tell you. I also sometimes am  
20 invited to give continuing education lectures. And, 11:20:02  
21 for example, at the -- I've given courses, for seven  
22 years in a row, at the American Psychiatric Association  
23 on sex and love, mostly love I use as -- as the title,  
24 and we talk about sexual problems and the barriers to  
25 loving. 11:20:25

1           And this year's APA meeting, I -- I am  
2     presenting a symposium with three colleagues on whether  
3     or not this is time to reexamine the best practices for  
4     transgender youth.

5           So all those things are -- in my review, are           11:20:39  
6     -- are my teaching.

7           Q     I was going to ask you about the May  
8     presentation.

9           Who are your copresenters for that?

10          A     Sasha Ayad, Lisa Marciano and Ken Zucker.           11:20:55

11          Q     Thank you. When is that expected to be  
12     presented?

13          A     May 24th.

14          Q     And do you know if there are other panels or  
15     presentations regarding the care of transgender           11:21:15  
16     patients at that conference?

17          A     There probably are, but I'm -- I haven't seen  
18     the entire program. But -- but there are usually --  
19     there usually are one or two presentations.

20          Q     And you said it was Sasha Ayad, Ken Zucker.           11:21:29  
21                 And who was the third person?

22          A     Lisa Marciano.

23          Q     Right. So I just had one -- a couple of  
24     follow-up questions about the discussion we were having  
25     about seeing prepubertal and adolescent patients.           11:21:46

1           When is the last time you saw a prepubertal  
2   child patient?

3           A   Physically saw?

4           Q   Or -- or virtually. I mean, as your patient.

5           A   Maybe two years ago. 11:22:20

6           Q   And how about an adolescent, meaning puberty  
7   while -- through being a minor?

8           A   Three weeks ago.

9           Q   And what was the age of that patient?

10          A   17. 11:22:44

11          Q   Okay. Let's just turn to page 2 of your CV.  
12   I had a couple of questions there.

13           MR. BROOKS: Just checking --

14           MS. HARTNETT: I'm just --

15           MR. BROOKS: Since it's been an hour, I was 11:23:00  
16   just checking. The witness says he's fine and doesn't  
17   need a break yet.

18           MS. HARTNETT: Okay. Please let me know.

19   This is --

20           MR. BROOKS: We're on -- 11:23:08

21           MS. HARTNETT: So --

22           MR. BROOKS: -- the next page. If you'll  
23   direct -- I can't fit the whole page on the screen at a  
24   time, so you have to direct me to portions of it.

25           MS. HARTNETT: Okay. It's -- I'm looking 11:23:16

Page 91

1 at -- under "Professional Societies."

2 MR. BROOKS: All right. I have it up.

3 BY MS. HARTNETT:

4 Q Dr. Levine, on page 2 of your CV, you list  
5 professional societies; correct? 11:23:28

6 A Yes.

7 Q Is the Cochrane Collaborative a professional  
8 society?

9 A Is the what?

10 Q The Cochrane Collaborative. 11:23:40

11 A I don't know the answer to that question. The  
12 Cochrane Library, you're talking about?

13 Q The Cochrane Collaborative.

14 A Cochrane Collaborative.

15 Well, I -- the word "Cochrane" is -- is what 11:23:54  
16 comes to mind. It -- the second word changes from  
17 whomever is using it.

18 I don't think it's a society. It's an  
19 organization that does objective appraisal of -- of  
20 scientific questions or controversies. And I -- I 11:24:13  
21 don't -- I never thought about that as a society;  
22 therefore, it's not listed there.

23 Q Okay. And I apologize. I believe I misstated  
24 the name of it. It's on paragraph 4 of your report,  
25 which you can look back to, but it then will require 11:24:31

Page 92

1 flipping forward again.

2 You discussed being an invited member of the  
3 Cochrane Collaboration subcommittee, and so I was just  
4 trying to understand whether the Cochrane Collaboration  
5 is a professional society. 11:24:42

6 A Well, it's an organization, and it's an  
7 organization devoted to the objective appraisal of  
8 issues that are controversial in medicine, throughout  
9 medicine, every branch of medicine, every specialty of  
10 medicine. It's an older institution, and it's among 11:25:02  
11 the most highly respected institutions about objective  
12 scientific appraisal of clinical work, and I -- I am on  
13 the -- one of their committee- -- I'm on two of their  
14 committees, actually.

15 Q Which committees are you on? 11:25:20

16 A It's the evaluation of puberty blockers and  
17 the evaluation of cross-sex hormones for transgender  
18 teens.

19 Q Do you know how many committees the  
20 Cochrane Collaboration has? 11:25:35

21 A No. I think it's many decades old, and it --  
22 that's -- but the answer to your question is I don't  
23 know.

24 Q Are you a member of the Cochrane  
25 Collaboration? 11:25:53

1 A I'm a member of those subcommittees.

2 Q And can you describe your work on those  
3 subcommittees? What does that entail?

4 A I'm hesitating to answer that question because  
5 you're going to ask a follow-up question, and it is my 11:26:12  
6 understanding that until the publication of our work is  
7 finished -- is published, our work is published, that  
8 we are not to discuss the processes and the content  
9 of -- of that.

10 So I -- I feel constrained to, you know, ask 11:26:35  
11 you not to ask me more questions about that.

12 MR. BROOKS: Well, I -- I'm -- I'm not going  
13 to instruct the witness either way. I will advise the  
14 witness that we can, I'm sure with counsel's agreement,  
15 designate a portion of the transcript as confidential 11:26:50  
16 and kind of proceed question by question as you are  
17 comfort- -- as you are -- as you feel able, given --  
18 I -- I don't know the nature of your commitments to the  
19 organization.

20 But we can designate a portion of the 11:27:04  
21 transcript as confidential, which will make it  
22 available to attorneys representing parties in this  
23 case but would prevent it from being published  
24 generally.

25 So I -- I -- I offer that. I don't -- I don't 11:27:18

1 represent Dr. Levine, and I don't know that in  
2 connection with that -- that professional activity, and  
3 I don't know the nature of the obligations, but I'd  
4 just advise the client of that pos- -- of that --  
5 Dr. Levine of that possibility. 11:27:37

6 If you want --

7 BY MS. HARTNETT:

8 Q Does your work with the Cochrane -- does your  
9 work with the Cochrane Collabor- -- Collaboration  
10 affect your -- sorry. 11:27:46

11 Has your work on the Cochrane Collaboration  
12 informed your opinions in this matter?

13 A My work with the Cochrane group, in reading  
14 about the evidence on those two -- on that subject of  
15 puberty blockers adds to my -- I should say there's -- 11:28:17  
16 I'm hesitating because I really don't know whether I  
17 should be saying anything about this, even answering  
18 your reasonable question.

19 Q I appreciate that, but --

20 A Pardon me? 11:28:51

21 Q -- we do need to know this for your views, and  
22 so I would ask if we -- could you -- could -- are you  
23 able to answer my questions and we can designate this  
24 portion of the transcript as confidential, meaning it  
25 would not be publicly disclosed? 11:29:03

Page 95



1           A     There's nothing that I have -- there's nothing  
2     that I have seen in my work with Cochrane that has led  
3     me to modify what is in that report.

4 Q Can you please generally describe what the  
5 nature of your work is with Cochrane? 11:29:20

6           A    It is to read and respond to summaries of the  
7   data, various studies.  It has been to help  
8   conceptualize what the issue is and what measurements  
9   we need -- are needed in order to answer the question  
10  in the future about a more -- to provide data in the           11:29:43  
11  future if -- based on studies.  It's been about trying  
12  to limit the number of issues that need to be measured  
13  to -- in outcome studies in order to be practical  
14  versus comprehensive.

15                   So my work has been to participate with other                   11:30:06  
16       people in Zoom discussions after we read documents and  
17       to given our opinions about draft documents.

18                   And you may or may not know how Cochrane  
19       works, but it's a series of -- like, our subcommittee  
20       goes through a number of other committees above them to       11:30:31  
21       be consistent and -- with the traditions of Cochrane.

22                   And so I'm not, you know, privy to the  
23       committees above the subcommittee. I just sometimes  
24       hear about, learn about, their -- their responses to  
25       druff -- draft reports. 11:30:54

1 So I think that's my answer to your question.

2 Q Okay. Are you a member of the Society for the  
3 Scientific Study of Sexuality?

4           A     The -- oh, no longer.

5 Q What is the Society for Scientific Study of 11:31:19  
6 Sexuality?

7           A    It's a bunch of clinicians who are  
8   interested in -- it's a bunch of clinicians who are  
9   interested in providing services for people's sexual  
10 problems. 11:31:36

11 Q And you ended your membership there in 1999?

12 A Yes, apparently so.

13	Q	Why?
----	---	------

14           A     Apparently so.  I -- I -- if I hadn't looked  
15     at my CV, I wouldn't have been able to answer your           11:31:56  
16     question.

17 Q Okay. I'm sorry, I was asking why you stopped  
18 being a member in 1999.

19           A    Oh.  Because I felt that the majority of the  
20           membership thought very differently than me.  They                   11:32:15  
21           weren't -- they were mostly Master's prepared people.  
22           They included people who were sexual surrogates.  It  
23           was a potpourri of people interested in human sexuality  
24           that did not have my academic interest in sexuality.

25 I was interested, I guess -- back then, in the 11:32:39

1 '90s, there was the -- there was the Society for Sex  
2 Therapy and Research, and there was this society.  
3 Quadruple S, it's called. And this was -- and there  
4 was another society called AASEC- -- AASECT. And  
5 the -- the range of professional degrees, the people 11:32:59  
6 who had -- the people in those societies had different  
7 ranges of professional degrees, and they had different  
8 interest in -- sort of an understanding of sexual  
9 disorders and in research, and I thought that the  
10 society for scientific study of sex really -- I thought 11:33:23  
11 that the activities of the organization did not rise to  
12 the level of -- of the title of their organization,  
13 that it really wasn't scientific.

14 And, you know, it is amazing to me what --  
15 what people call -- who wrap themselves in the mantle 11:33:49  
16 of science that really don't have a concept of science.

17 So I -- you know, when I was younger, I wanted  
18 to be part of the scene and -- and when I got into part  
19 of the scene, I didn't want to be part of the scene.

20 Q Are you aware of the Society for Evidence 11:34:06  
21 Based Gender Medicine?

22 A Yes.

23 Q And does that go by an acronym?

24 A Is what?

25 Q Does that go by an acronym? 11:34:15

1 A Yes. SEGM.

2 Q SEGM. Are you a member of SEGM?

3 A I contributed -- when I -- when I learned  
4 about SEGM probably a year and a half ago, two years  
5 ago, I -- I felt that I -- I wanted to support that 11:34:35  
6 because they were interested in evidence, in scientific  
7 evidence, so I sent them a check for \$200.

8 So I don't know if I'm a supporter of it or --  
9 but I -- they consider me to be an integral and  
10 important member of their society. So I guess, based 11:35:02  
11 on the fact that I gave them a one-time check of \$200  
12 and they hired me to write a -- to -- to develop a  
13 paper and they put me on a subcommittee to talk about  
14 psychotherapy of adolescents, so I guess I am a member  
15 of SEGM. 11:35:21

16 I think I'm a valued member of SEGM.

17 Q Understood. Sorry, you said you were on the  
18 psychotherapy -- child psychotherapy subcommittee?

19 A I think we should call it an adolescent -- it  
20 doesn't exist anymore. We met -- we met every two 11:35:45  
21 weeks for almost a year, but I certainly was an active  
22 participant of that.

23 Q And what -- what was the work of that  
24 subcommittee?

25 A It was talking about what -- it was talking 11:36:01

1 about how to develop case histories that would teach  
2 mental health professionals, in general, on how to  
3 approach a -- an -- an approach to transgender children  
4 and adolescents.

5 As you probably know, there has been, in the 11:36:33  
6 last ten years, a dramatic increase in the number of  
7 teenage children who are declaring themselves to be  
8 trans people. And so the number of, quote, experts --  
9 the epidemiology is such that there is enormous  
10 pressure on a -- on the few people who say they're 11:36:53  
11 interested in gender, taking care of gender cases.

12 So SEGM was trying to develop concepts that  
13 could be taught to people in the community who are not  
14 experts. We are trying to interest them in providing  
15 psychiatric services, psychological services to 11:37:14  
16 families and to the -- the patients themselves.

17 And so we were talking about how to -- how to  
18 achieve that, whether we should publish -- whether we  
19 should give a conference, whether we should -- they  
20 just -- they talked about various ways of -- of 11:37:32  
21 informing -- of getting more mental health  
22 professionals to -- to stop ignoring this problem and  
23 to be interested in -- in how to help these kids and  
24 their families.

25 Q Okay. Thank you. 11:37:56

1           So you said that that subcommittee is no  
2     longer meeting?

3           A     That particular committee is no longer  
4     meeting, as far as I know. But that -- but SEGM  
5     sponsors many things that I'm totally unaware of.           11:38:07

6           Q     Was there a work product that came out of that  
7     committee?

8           A     Well, in some sense, my paper, my most recent  
9     paper, didn't come out of that committee, but it came  
10    out of the deliberations of that committee because one       11:38:24  
11    of the strategies that SEGM had is that they wanted  
12    to -- they wanted to put things in the literature  
13    that -- that were based on evidence rather than based  
14    on precedent.

15               And so I think that led to the publication of       11:38:45  
16    my -- of 147.

17           Q     What do you mean, precedent?

18           A     Well, as you may or may not know, there's a  
19    60-year history of -- of trying to find treatments for  
20    transgendered individuals and -- so there has been a       11:39:08  
21    precedent of treatment over the years that has preceded  
22    the -- the -- the scientific demonstration of the  
23    efficacy and the long-term outcomes of that treatment.

24               So I would say that precedent is a -- is a  
25    very important influence in how transgender people are       11:39:30

1 being treated today and -- so that's how I use the term  
2 "precedent." That is, we have patterns or fashions of  
3 treatment that have gone in -- far in advance of the  
4 scientific demonstration of the efficacy and were  
5 the -- and the long-term outcomes of those treatments. 11:39:55

6 So that's the term precedent, as I -- as -- as  
7 how I use it or how I think about it.

8 Q And was your -- I think your testimony was  
9 that you were in the kind of ground floor of starting  
10 that precedent; is that correct? 11:40:10

11 A I -- well, if -- well, the ground floor really  
12 began in the '70s, and I was --

13 Q I'm sorry, did your counsel say something?

14 MR. BROOKS: No. I looked at him. He looked  
15 at me. I didn't say anything. 11:40:28

16 THE WITNESS: Yeah.

17 MS. HARTNETT: Just for the record, the  
18 counsel and the witness appeared to be exchanging some  
19 sort of a glance, but please continue.

20 THE WITNESS: So the ground floor has to do 11:40:37  
21 with the Harry Benjamin International Dysphoria  
22 Association, which I think I joined in 1974 or  
23 something like that, and I was in that program or in  
24 that -- that associ- -- whatever you call that, a  
25 society or something. I was in that professional 11:41:02

1 organization for many, many years. And in 19- -- when  
2 the fifth standard of care was being thought about, I  
3 was named to be the chairman of the writing group that  
4 made what was called the Fifth Edition.

5 So -- 11:41:25

6 BY MS. HARTNETT:

7 Q So you were part of creating the precedent;  
8 correct?

9 A Yes. The only objection I had, what is ground  
10 floor. That's the only word I was responding to. I 11:41:34  
11 didn't know what ground floor meant.

12 Q Fair enough. So back to SEGM. Were you part  
13 of helping to develop treatment guidelines for the  
14 treatment of gender dysphoria with SEGM?

15 A I don't know that SEGM has ever issued 11:41:52  
16 treatment guidelines. In a sense, my latest  
17 publication is -- is probably in that ballpark.

18 What we're trying to do is to -- I think what  
19 we are trying to do is -- is create treatment  
20 guidelines. 11:42:19

21 You know, Sweden, Finland, the UK and France  
22 have all come out and said that -- let's slow this  
23 down, let's be very careful. Even -- even in the  
24 United States, there are people who used to be on  
25 this -- sort of on a different -- they had a -- they 11:42:46

Page 103



1 had a different treatment guidelines.

2 There's been a wave of objectivity --

3 Q I'm sorry to interrupt. I'm sorry to  
4 interrupt you, but I -- I really need to ask you to  
5 answer my question. And I -- I think we're -- my -- my 11:42:57  
6 question was just whether SEGM is developing treatment  
7 guidelines.

8 A I think it's the aspiration of SEGM to develop  
9 development treatment guidelines in keeping with what  
10 is happening scientifically and -- in terms of 11:43:13  
11 objective reviews.

12 So I'm not so sure that SEGM has published  
13 treatment guidelines yet, but I do think they're  
14 interested in -- in providing a different set of  
15 guidelines that may have dominating the United States 11:43:34  
16 and European countries in the past. And Australian and  
17 compani- -- countries in the past --

18 Q Are you part -- are you part of any effort at  
19 SEGM to develop treatment guidelines on a going-forward  
20 basis? 11:43:55

21 A No, not directly, but I do --

22 Q Are you involved --

23 A I do believe that my recent article will be  
24 read by people and considered by people who are  
25 going -- if -- if they do develop treatment guidelines. 11:44:12

Page 104

1           Q    Is -- is -- am I understanding correctly that  
2           your article was an effort, in conjunction with SEGM,  
3           to affect the practitioner community about how you view  
4           treatment should be provided?

5           A    To the extent that treatment should be                   11:44:35  
6           provided based upon a thorough informed consent  
7           process, that my article describing informed consent  
8           would be affirmative answer to your question that I --  
9           I'm hoping that the influence of my article will  
10          influence all treatment guidelines in the future,               11:45:01  
11          regardless of who issues those guidelines.

12               MR. BROOKS: Counsel, when --

13          BY MS. HARTNETT:

14          Q    Are you --

15               MR. BROOKS: When you come to a convenient               11:45:10  
16          point, let's take one more break and have one more  
17          stint before lunch. I don't mean to disrupt the line  
18          of questioning, but when you come to a point, it would  
19          be good.

20               MS. HARTNETT: I appreciate that. I have a               11:45:20  
21          couple more questions on this, and then we can take a  
22          break.

23          BY MS. HARTNETT:

24          Q    Are you actively involved in any SEGM work  
25          currently?   11:45:29

1 A No.

2 Q Do you know where SEGM receives its funding  
3 from?

4 A I believe that -- that the hundred or so  
5 people that are, quote, members contribute something, 11:45:55  
6 but it's something as modest, perhaps, as I gave, \$200.  
7 There must be a large donor or set of donors.

8 And the answer to your question is I don't  
9 know the answer.

10 Q Is there someone at SEGM that you think would 11:46:15  
11 know that answer?

12 A Yes.

13 Q Who is that?

14 MR. BROOKS: Objection.

15 THE WITNESS: There are several people. 11:46:26

16 May I answer that question?

17 MR. BROOKS: You may answer.

18 THE WITNESS: Stephen Beck, Dr. Stephen Beck,  
19 and Ema Zane, E-M-A Z-A-N-E.

20 MR. BROOKS: And, Counsel, we will designate 11:46:47  
21 the testimony about finances of SEGM as confidential.

22 MS. HARTNETT: We can -- oh, we can  
23 provisionally do that. That's fine.

24 BY MS. HARTNETT:

25 Q You mentioned -- I have just one more. 11:46:59

Page 106

1           You -- you mentioned you were a valued member  
2       of SEGM. Is that just your -- is there a special group  
3       of people that are valued, or do you just kind of view  
4       yourself as having a valued role in the organization?

5           A     Well, I was asked to develop this paper or a       11:47:12  
6       series of papers on informed consent, and to me, I  
7       considered that a compliment, and it was based upon my  
8       previous publications about this matter.

9           And in the concept -- and in the discussions  
10      of the committee on psychotherapy, I just got the sense    11:47:41  
11      that -- I offered an opinion and people really -- they  
12      often said that was helpful or clarifying or, you know,  
13      really good or "Can I use that term?" or whatever.

14           So whatever the subjective appraisal I was  
15      making of my role, my status, among these very           11:48:04  
16      respected people, I believed that I was a valued  
17      member. You know, I could be --

18           Q     Do you think you're the most --

19           A     -- delusional about that.

20           Q     Do you think you're the most -- are you the       11:48:18  
21      most highly credentialed professional in SEGM?

22           A     No.

23           Q     Huh?

24           A     No.

25           MS. HARTNETT: Okay. I think this is a good       11:48:34

1 time for a break.

2 MR. BROOKS: All right.

3 THE VIDEOGRAPHER: Off the record at  
4 11:49 a.m.

5 (Recess.) 12:00:19

6 THE VIDEOGRAPHER: We are on the record at  
7 12:01 p.m.

8 MS. HARTNETT: Thank you.

9 BY MS. HARTNETT:

10 Q Welcome back, Dr. Levine. 12:00:40

11 A Thank you.

12 Q I think I want to turn from your -- we were  
13 talking through your CV a bit and now just go to your  
14 report. So if you could -- I'm going to be asking a  
15 question about paragraph 5, if you want to pull up that 12:00:53  
16 page?

17 MR. BROOKS: We now have paragraph 5 on the  
18 screen.

19 MS. HARTNETT: Great.

20 BY MS. HARTNETT: 12:01:14

21 Q So you, in the first sentence of paragraph 5,  
22 say you first encountered a patient suffering with  
23 what -- sorry -- "what we would now call gender  
24 dysphoria in July 1973."

25 Do you see that? 12:01:30

Page 108

1 A Yes, I do.

2 Q Who was that patient?

3 MR. BROOKS: I will, of course, object to the

4 extent you're asking the doctor to disclose

5 confidential --

12:01:43

6 THE WITNESS: Actually --

7 MR. BROOKS: -- identifying information.

8 THE WITNESS: Actually, the patient and I

9 wrote a paper together and -- and so the patient has

10 used the name, so I feel like I can tell you the name.

12:01:52

11 BY MS. HARTNETT:

12 Q That's why I was asking.

13 A Yeah. So the name was Rutherford Shumaker.

14 Q And did you refer to the patient as

15 "Rutherford" or some other name?

12:02:07

16 A Well, the name of the -- the name of the

17 article was Increasingly Ruth: Towards an understanding

18 of sex reassignment surgery.

19 And so Rutherford, in, I think -- became Ruth.

20 So Ruth and I published that paper, and then I wrote a

12:02:32

21 follow-up to that paper after Ruth committed suicide in

22 her family's home. But that was 1983. I'd have to

23 check the CV.

24 So that was my -- the man coming to me as

25 Rutherford, who eventually became Ruth, came to me in

12:02:56

Page 109

1 July of 1973.

2 Q And do you recall how long after you first  
3 encountered that patient you encountered your next  
4 patient that was suffering from what we would now call  
5 gender dysphoria? 12:03:11

6 A Oh, it probably -- it was probably a couple of  
7 months.

8 The answer to your question, I don't  
9 specifically recall, but --

10 Q Okay. 12:03:26

11 A -- I -- I -- there was enough pressure by  
12 patient request for care that we started this -- this  
13 clinic.

14 Q Understood. And you note here, on your  
15 paragraph 5, you also founded the Case Western Reserve 12:03:37  
16 University Gender Identity Clinic; correct?

17 A Correct.

18 Q And you note, later in that paragraph, that in  
19 1993, the Gender Identity Clinic was renamed.

20 A In 1993, I left full-time employment at 12:03:52  
21 Case Western Reserve, and I continued the program, but  
22 we changed the name of the program, but our work  
23 evaluating and providing services for trans individuals  
24 continued.

25 Q And what did you change the name of the 12:04:15

Page 110

1 program to?

2 A Well, I think we just called it the Gender  
3 Identity Clinic of Levine, Risen -- Althof, Levine and  
4 Risen, which was the name of our clinical practice,  
5 Althof, Levine and Risen. So it --

12:04:34

6 Q Okay.

7 A Gender Identity Clinic at ALR.

8 Q And when you -- when the university kind of  
9 discontinued -- or you discontinued the affiliation  
10 with the university in 1993, did you consider that to 12:04:50  
11 be a dark day in the department, in the politics of the  
12 department?

13 MR. BROOKS: Objection; compound question.

14 THE WITNESS: Number one, I did not  
15 discontinue my affiliation. I changed my affiliation. 12:05:06  
16 That is, I was salaried until 1993, and then I left the  
17 university and personally, for a while, I did consider  
18 it a -- a great disappointment that I left the  
19 university.

20 BY MS. HARTNETT: 12:05:30

21 Q Did you consider it a dark day in the  
22 department, in the politics of the department, at the  
23 university?

24 A That per se wasn't the source of the darkness.

25 That day wasn't it. In my view, it's a very 12:05:43

Page 111



1 prejudicial view, the dark day came when a new chairman  
2 was selected, who came aboard, who then basically ran  
3 the department into a great debt, and then I and  
4 several other program- -- my program and several other  
5 programs needed to be cut from the department in order 12:06:07  
6 to get the department back into solvency.

7 So the fact that one day I left was the  
8 by-product of things that had happened over a  
9 three-year period.

10 So the dark days began, I think, on day one 12:06:25  
11 when the chairman came.

12 Q Thank you. Are you familiar with the  
13 University Hospitals?

14 A The department of psychiatry was part of the  
15 University Hospitals of Cleveland. 12:06:41

16 Q And you did your psychiatric residency at the  
17 University Hospitals of Cleveland?

18 A Yes.

19 Q Do you have an affiliation there now?

20 A I do. I'm a clinical professor. 12:06:52

21 Q And how often do you -- if at all -- do you go  
22 to the University Hospitals?

23 A Not very frequently. The -- the resident  
24 comes to me, and I -- but I am probably going to be  
25 teaching a seminar at University Hospitals in the next 12:07:13

Page 112

1 three months because I'm part of a committee to plan  
2 the curriculum on sexuality and gender.

3 Speaking of education, the university --  
4 other -- other institutions also asked me to teach  
5 about this subject. And on August -- on April 7th, I'm 12:07:39  
6 going to Akron to teach -- or virtually I'm going to  
7 teach a three -- a two-and-a-half-hour seminar.

8 And I forgot to mention to you before, and I'd  
9 like you to hear this, that when you were questioning  
10 me about my credentials or not having a certificate 12:07:57  
11 about -- in child psychiatry, you should know, I forgot  
12 to tell you that Cleveland Clinic, department of child  
13 psychiatry, and the University Hospitals, the  
14 department of child psychiatry, sends residents to be  
15 with me as part of their training in child development 12:08:18  
16 and child clinical issues, child and adolescent  
17 clinical issues.

18 So I think -- I just forgot to mention that.

19 Q Are you familiar with the University  
20 Hospitals' LGBTQ and gender care program? 12:08:48

21 A I'm aware that it exists, yes.

22 Q Have you ever talked to any clinicians in that  
23 practice?

24 A No one has ever talked to me in that practice.  
25 The only time I have interaction with them is when -- 12:09:00

1 if I present grand rounds, some of those people ask me  
2 a question. But they've never consulted me whatsoever  
3 in the formation of their clinic and in the ongoing  
4 work of their clinic.

5 Although, Cleveland Clinic has a very similar 12:09:20  
6 program, and they have called me up and -- for some  
7 advice sometimes.

8 But my -- my, quote, own University Hospitals'  
9 place I don't really think has any people from child  
10 psychiatry in it, but I'm not sure because they have 12:09:38  
11 kept me away.

12 Q What do you mean they have kept you away?

13 A Just what I explained. They have never  
14 communicated with me. It is -- you know, other people  
15 know me as being published in this area. You know, I 12:09:54  
16 think I've written 20 articles on this -- you know, I  
17 have 20 or so publications in this area. You would  
18 think that they would invite me or consult with me or  
19 ask me questions, but I think they recognized that they  
20 are part of what is called affirmative care and what I 12:10:18  
21 would say, rapidly affirmative care, and -- and they  
22 sense that I'm not so interested in rapid, that -- that  
23 I believe that -- that I have long believed that people  
24 who have this kind of dilemma need some patient time in  
25 talking about this matter. 12:10:45

1           And while I can't tell you how they feel about  
2     me, I can only deduce that they're not interested in my  
3     concepts because --

4           Q     Have you --

5           A     -- they must be different than their concepts.     12:10:57

6           Q     Have you offered your -- your services to  
7     them?

8           A     No.

9           Q     You said your understanding is that they  
10    provide rapid affirmative care; is that correct?             12:11:10

11          A     I presume so. I -- you know, I can't  
12    understand why -- why the organizers and the leaders of  
13    those -- that team are not interested in anything I  
14    have to say because they've never asked me.

15          Q     So just because someone hasn't asked you for     12:11:29  
16    your view, do you assume that they're not interested in  
17    what you have to say?

18          A     This -- I wouldn't say as a general principle,  
19    but I would say in this case, I have long assumed that,  
20    correctly or incorrectly.                             12:11:44

21          Q     It sounds like you don't agree with rapid  
22    affirmative care; is that fair?

23          A     Yes. I don't believe that people, after  
24    meeting someone for an hour, for example, ought to be  
25    given a firm diagnosis and a prescription for hormones.     12:12:00

Page 115

1 Q Is that your definition of rapid affirmative  
2 care?

3 A That would be one definition, yes.

4 Q Can you give me a more general definition of  
5 what rapid affirmative care is? 12:12:17

6 A It would be -- it would be a commitment to be  
7 affirmative in -- in being a cheerleader for social  
8 transition or taking hormones or having one's breasts  
9 removed after what I would consider to be an inadequate  
10 evaluation. 12:12:34

11 So it begins with an adequate evaluation.  
12 It -- it requires having an understanding of the  
13 elements of informed consent. And in dealing with  
14 minors, it has to do with working with not only with  
15 the patient but with the parents. 12:12:51

16 So rapid affirmative care would be care that  
17 does not meet my criteria for thorough evaluation,  
18 including a developmental history, a process of  
19 informed consent and involvement, over time, with the  
20 parents so they consider the weighty -- the weighty 12:13:10  
21 implications of -- of what affirmative care represents.

22 So anything short of deliberation in this and  
23 careful consideration I would kind of dismiss as rapid.

24 Q If affirmative care is given with deliberation  
25 and informed consideration, do you disagree with that? 12:13:33

Page 116

1           A    No.  No.  I think parents -- parents have a  
2   weighty decision to make, but they ought to be informed  
3   about the state of science.  The -- the health tour  
4   benefits have to be understood in terms of the  
5   scientific likelihood of achieving those benefits.  And   12:13:51  
6   they have to understand the short-term medical but more  
7   important the long-term psychosocial risk of what  
8   they're doing.

9           And if those competent parents, knowing the  
10  child as they know them, decide, after they're           12:14:09  
11  informed, they -- they have my blessing to socialize  
12  their child in the opposite gender.

13           Whether I think in that particular case it's a  
14  wise thing or not, it's not my decision to make.  I  
15  don't actually believe that people like me ought to be   12:14:29  
16  recommending.  I think we ought to be educating,  
17  evaluating and informing and the parents and the child  
18  make the decision with my supportive help, both on the  
19  positive side and the negative side.

20           I am to be the trustee, informer of what           12:14:45  
21  science knows, and I believe that clinicians who don't  
22  know science, who actually think they can evaluate this  
23  in a -- in -- in a -- in an hour, I just think that's  
24  not good care.

25           Q   Is your view that the clinicians at the           12:15:06

1 University Hospitals LGBTQ and gender program don't  
2 know science?

3 A I don't know what they know. I don't know  
4 what they know. I have no views about that because I  
5 have no means of knowing, only that I get to see people 12:15:22  
6 brought to me after they've gone to various affirmative  
7 care programs and the parents are horrified at the  
8 recommendations that are being made. So --

9 Q How many -- sorry. Go ahead.

10 A But in answer to your specific question, since 12:15:44  
11 I don't even know the people there and I don't know  
12 what they're doing, I'm not -- I would just -- I would  
13 just -- I pose these standards, and I don't know  
14 whether they meet them or not.

15 I have not been impressed in general that 12:16:04  
16 affirmative care programs in various cities that I get  
17 to hear about meet those criteria.

18 I'm just trying to help people, you know,  
19 realize the importance of trans care and -- and trans  
20 care, to me, includes careful evaluation and -- and 12:16:19  
21 addressing the comorbidities that are frequently  
22 present in these kids.

23 And by "kids," I mean even teenagers.

24 Q Have you had -- sorry, so you -- but your  
25 understanding is that the University Hospitals LGBTQ 12:16:39

Page 118

1 and gender care program does provide the rapid type of  
2 affirmative care; is that right?

3 MR. BROOKS: Objection.

4 THE WITNESS: I already --

5 MR. BROOKS: Asked and answered. 12:16:48

6 THE WITNESS: -- answered that question. I'm  
7 not -- I'm not aware of what they do. I -- I am --

8 BY MS. HARTNETT:

9 Q Okay. Sorry, I thought you had said you  
10 thought that they provided rapid affirmative care, 12:17:01  
11 which is why I was asking.

12 A I wouldn't be surprised if their definition of  
13 inadequate evaluation is different than my evalua- --  
14 my -- my definition of an adequate evaluation.

15 Q Do you know what their definition is of an 12:17:20  
16 adequate evaluation?

17 A No. And because I don't know, I don't want to  
18 endorse them, nor do I want to condemn them.

19 Q What is the basis for your understanding that  
20 there is kind of rapid transition care being provided 12:17:32  
21 out there?

22 MR. BROOKS: Objection; vague.

23 BY MS. HARTNETT:

24 Q Sorry, let me just use your term.

25 You said rapid affirmation. 12:17:42

Page 119



1 A Well --

2 MR. BROOKS: I was objecting to the outlier as  
3 vague. I'm not sure what you -- are you referring to  
4 the clinic you've been discussing or something else?

5 BY MS. HARTNETT: 12:17:52

6 Q What is your basis for your view that there  
7 are clinicians in the United States performing rapid  
8 affirmation care?

9 A Thank you for asking that question.

10 I have been in contact with -- that is, 12:18:03

11 parents -- there -- there are parent groups who cannot  
12 find -- there -- there are groups of parents who  
13 brought -- were brought together, who came together,  
14 bounded -- bound together in organizations who are  
15 objecting to what they call rapid affirmation and the 12:18:27  
16 inability to find a therapist in their community who is  
17 willing to just do psychiatric care like they would do  
18 psychiatric care if a child presented simply with  
19 anxiety or depression or substance abuse or some other  
20 behavioral problem. 12:18:48

21 The -- the basis for -- for my -- the answer  
22 to your question is parents, both Cleveland parents,  
23 national -- parents from all over the country and  
24 parents from the UK. I am aware that parents are  
25 particularly perturbed by rapid affirmation and its 12:19:07

Page 120

1 treatment, and they -- they have complaints that their  
2 child is not understood; that is, their problems have  
3 not been understood.

4 Q How many parents have you talked -- how many  
5 parents have you talked to about their concern with 12:19:26  
6 what you call the rapid affirmation model?

7 A Well, I gave a talk to 35 parents probably a  
8 year ago. In 2017, I think I wrote about it in the  
9 article that -- the last four or five cases that I was  
10 involved with, the parents all said the same thing; 12:19:53  
11 that is, they were horrified that after one hour,  
12 their -- their child was diagnosed and -- and had  
13 recommend- -- and had recommendations that horrified  
14 them.

15 Q Sorry, how -- where was the talk that you gave 12:20:10  
16 to the 35 parents? What -- what was that?

17 A It was in -- it was in my easy chair in my  
18 bedroom.

19 Q What was the convening? What was the venue  
20 for that? 12:20:23

21 A It was a group of parents who invited me to  
22 give a talk, and what I gave a talk on was -- the  
23 aspects of what -- what I knew about human identity,  
24 not just --

25 Q What was -- 12:20:38

1 A -- not just gender identity.

2 Q Was this group of parents affiliated with an  
3 organization, or how did they -- how did they present  
4 themselves? As some sort of an organization?

5 A A woman contacted me and said that she belongs 12:20:50  
6 to an organization of -- of concerned parents of trans  
7 teenagers or children. I'm not sure which. Mostly  
8 teenagers. She actually sent me an analysis of --  
9 of -- of -- that she made, a little research that she  
10 had done that demonstrated a very high intelligence 12:21:10  
11 in -- of their -- all the children in this group and  
12 very high incidents of autism and other developmental  
13 problems and -- so she sent me that data, and she  
14 wanted some advice to -- from me about how to get that  
15 published. 12:21:37

16 And -- and then she invited me to give a talk.  
17 When we talked, she then said she would get back to me,  
18 and she got back to me and invited me to give a talk to  
19 the parent group. And so that's what happened.

20 Q Is the parent group called Genspect? 12:21:51

21 A No. I think -- it -- it might -- it -- this  
22 was an American group of people and --

23 Q What was the parent's name that did the  
24 research?

25 A You know, I -- I would have to look that up. 12:22:15

Page 122

1 I don't remember.

2 Q I'm just going to try to -- so I appreciate  
3 what you've explained.

4 Could you tell me how many actual parents have  
5 described to you, personally, an experience where their 12:22:29  
6 child was diagnosed and prescribed treatment in an  
7 hour?

8 A Well, if -- some people, it would be two  
9 hours, okay?

10 Q Let me just start with one hour. 12:22:46

11 How many parents have told you directly that  
12 their child had been prescribed -- diagnosed and  
13 prescribed treatment in an hour?

14 A I would say perhaps 50 percent of the people  
15 who -- who have consulted me. 12:22:59

16 Q And how many people have consulted you?

17 A I really can't answer. You know, if I told  
18 you 11, if I told you 16, if I told you four, I  
19 would -- I would have no conviction that I -- that --  
20 that that answer is correct. 12:23:19

21 I'm telling you I had the impression that over  
22 and over again parents complain about this. They  
23 complain about affirmation. They're afraid of  
24 affirmation, what that will mean to their child's  
25 future. And they complain that they can't get their 12:23:35

Page 123

1 point of view to influence their thera- -- the -- the  
2 person -- their gender expert that they took their kid  
3 to and -- and that they can't find anyone else who  
4 has -- who has the courage, they say, to just talk to  
5 their kid without saying they believe in affirmation 12:23:55  
6 because that's the right thing to do.

7 Q Thank you. I -- I just -- you've talked about  
8 the importance of scientific data; correct?

9 A Correct.

10 Q And you've made the representation that there 12:24:09  
11 is a practice of rapid affirmation happening in the  
12 United States; correct?

13 A As -- as far as I know, yes.

14 Q And what I'm trying to understand is the basis  
15 for your understanding that there is a phenomenon of 12:24:22  
16 rapid affirmation happening in the United States.

17 And so --

18 A Well --

19 Q -- I guess my question is -- sorry.

20 A -- the basis. And I've tried to answer the 12:24:33  
21 basis is -- is that the parents who consult me all  
22 tell -- pretty much all tell me the same story. It is  
23 multiple patient reports.

24 And when I -- when I was on that committee  
25 that we talked about before, of psychotherapy, people 12:24:52

Page 124

1 in Australia, people in Ireland, people in London, in  
2 various parts of the UK and -- let me think where this  
3 is a source of -- and the United States have all  
4 reported to me the same thing. Everyone says the same  
5 thing, that the parents complained to them about going 12:25:18  
6 to specialty care which rapidly confirms the diagnosis  
7 and recommends affirmation and tends to make the  
8 parents feel like they're -- they're doing a terrible  
9 thing by resisting transition.

10 Q You mentioned -- 12:25:39

11 A So the answer to your question is multiple  
12 sources, both directly in my clinical practice, both --  
13 what I read about sometimes in these legal proceedings,  
14 legal documents and in -- and -- and from my  
15 colleagues. 12:26:01

16 I -- I just want you to know that if -- that  
17 professionals all claim to do thorough evaluations, but  
18 I -- I'm not sure that our definition of thorough  
19 evaluation is -- is correct.

20 Q Have you talked to any gender-affirming 12:26:18  
21 professional to learn what their practice actually is?

22 A Well, I've read Dr. Adkins, for example,  
23 reassurance about the thorough evaluations done in her  
24 clinic.

25 And -- have I talked to any affirmation -- 12:26:40

1 well, I did talk to the Cleveland Clinic people and --  
2 who are -- were sharing with me their angst about what  
3 they should do with these borderline personality kids,  
4 kids who aren't doing well, who don't want to focus on  
5 anything but their transgender state. So they consult 12:26:57  
6 me about these -- these case- -- you know, they  
7 consulted me about this.

8 So I guess the answer is yes.

9 And if you ask me the number, I would say it's  
10 not a large number. I don't -- and I don't -- 12:27:14

11 Q Sorry, other than Dr. -- other than Dr. Adkins  
12 and whoever you talked to at the Cleveland Clinic, have  
13 you -- are you -- sorry.

14 You've never talked to Dr. Adkins; correct?

15 A I've never personally spoken to her, no. 12:27:25

16 Q So other than the people at the Cleveland  
17 Clinic that you referred to, have you spoken to any  
18 other gender-affirming professionals about their  
19 practices?

20 A Well, in these various legal matters, 12:27:37  
21 oftentimes I'm asked to review case material, and I --  
22 and I -- I haven't visibly, virtually, talked to -- the  
23 answer to your question is no, but I -- I certainly  
24 have seen materials that indicate the -- the quality of  
25 the interactions that have been between the affirming 12:28:09

Page 126

1 and the professional and the patient and sometimes the  
2 parents.

3 Q And you mentioned -- you mentioned multiple  
4 patient reports, I think, when you were saying what the  
5 basis was for your review. 12:28:24

6 Do you recall that?

7 A Yes.

8 Q Are you -- and there, you're talking about the  
9 patient would be the -- the parent of the child that's  
10 being cared for; right? 12:28:30

11 A Yes. I think if --

12 Q In other words, you were -- you were not  
13 getting complaints from the -- the child or adolescent  
14 that was being discussed; you were getting the  
15 complaint from the patient parent; is that right? 12:28:45

16 A Oh, I've heard -- I -- I've heard patients say  
17 that they were a little surprised by the rapidity of  
18 things, yes.

19 Q Sorry, one of your child or adolescent --

20 A So it's -- 12:28:58

21 Q -- patients --

22 A It's not entirely parents, but it's largely  
23 parents.

24 Q And then I've asked you how many parents  
25 you've directly heard reports of -- let's just say 12:29:10

Page 127



1 two-hour or less diagnosis and treatment. How many  
2 parents have you heard that from directly?

3 MR. BROOKS: Objection; asked and answered.

4 THE WITNESS: I would say 15 sets of parents.

5 And if you allow me to accept the reports of the people 12:29:31  
6 on the committee, probably it's over a hundred. But,  
7 you know, as I already answered, I can't really -- I'm  
8 just giving you numbers because you're asking for  
9 numbers.

10 BY MS. HARTNETT: 12:29:54

11 Q Well, isn't it important to have good data?

12 A You're right, it is important to have good  
13 information. And data varies in its nature. And  
14 parental reports that are consistent over time, to me,  
15 is good data. That represents good data. That are 12:30:10  
16 good data, rather.

17 Q Have you ever had a parent report to you a  
18 positive experience from an affirming practitioner, as  
19 you describe them?

20 A Ever had a positive experience. 12:30:35

21 Well, last Sunday morning, I gave a talk at a  
22 church, and a grandmother told me that her very  
23 disturbed granddaughter has transitioned to a -- living  
24 as a boy and she's far less disturbed and much happier  
25 and she's beginning to restart her life as a student 12:30:50

Page 128

1 now, when she couldn't function as a student before.

2 So if a grandparent -- I mean, it's -- it's --  
3 today's Wednesday. So that was Sunday morning.

4 So I think -- that is not the first time I've  
5 ever heard from somebody. I've also heard from 12:31:05  
6 grandmothers who were deeply concerned about their  
7 grandchild.

8 And, actually, come to think of it, I had an  
9 interview -- yes, I -- I have heard about a -- another  
10 trans male teenager who is doing very well now as -- 12:31:23  
11 and much better than they were doing living as a -- as  
12 a distressed female.

13 So I do have positive reports of people doing  
14 well.

15 And in -- in my years of taking care of -- of 12:31:39  
16 adults, I've seen some people, at least who have come  
17 back in follow-up after transition, who seem to be  
18 doing very well in life.

19 I'm not saying that -- so I -- you know, I get  
20 both sides of the coin here. 12:32:01

21 Q You haven't undertaken a scientific sampling,  
22 though, to figure out what parents' experiences are  
23 with affirming practitioners; correct?

24 A I -- no, I have no follow-up study on this. I  
25 am like other people who don't have follow-up studies. 12:32:18

Page 129

1 Q And it could be that parents that are having  
2 negative experiences are the ones that are seeking you  
3 out; correct?

4 A Yes. There's always a selection by a -- in --  
5 in clinics. When -- when you have data coming from any 12:32:35  
6 clinic, one of the methodologic questions is, What is  
7 the selection bias?

8 And so I -- I represent a person who has some  
9 kind of unknown or known reputation in the community,  
10 and so people come to see me because they think I have 12:32:54  
11 knowledge or attitude that is consistent with their  
12 position.

13 But, you see, in the -- in the fundamentals  
14 of -- of the use of statistics and creating scientific  
15 methodology, selection bias is a well-known problem, 12:33:12  
16 and that's one of the reasons why some studies need  
17 to -- that's one of the advantages of having multisite  
18 studies and multicultural -- studies from multiple  
19 countries, is -- is what we're going to do about  
20 selection bias. 12:33:31

21 Q I believe earlier you said that your view is  
22 that the doctor's role isn't to recommend the treatment  
23 for the minors who may be experiencing gender dysphoria  
24 but, rather, to provide information to the parents and  
25 the children and the parents and the children should 12:33:47

1 make the decision; is that fair?

2 A Yes. This is the idea that I am trying to  
3 educate the world about, that, actually, doctors don't  
4 know what the best treatment is for a particular child  
5 and that they shouldn't pretend to know because there's 12:34:06  
6 no follow-up data that are -- there's no compelling  
7 follow-up data. There's just anecdotal reports like  
8 you and I were just discussing. Or anecdotal reports.

9 And so given the fact that -- that people  
10 believe doctors and they believe that doctors know 12:34:24  
11 things and that I know doctors don't know things, you  
12 see, what I'm saying, what I'm trying to influence the  
13 world to think about is that we should make a -- we --  
14 we recommend that you go to surgery for appendicitis  
15 because we know the consequences of not having surgery. 12:34:44  
16 You're going to die from this condition if you don't  
17 have surgery, you see.

18 So we -- based on the consequences, we know  
19 what is indicated medically to save life or preserve  
20 function. 12:34:59

21 But in this particular area, the long-term  
22 follow-up of children or adolescents or even adults who  
23 undergo transition are not known. And I -- they're  
24 not -- they're simply not known.

25 And because we are -- some doctors make 12:35:15

1 recommendation to transition a seven-year-old or  
2 transition a 14-year-old or remove the breasts of a  
3 14-year-old, and I would say that what is the  
4 scientific basis of your recommendation to tell  
5 parents, who are often trusting of your knowledge base, 12:35:36  
6 what is the scientific basis of your recommendation?

7 And I say, given what we know about science,  
8 I'm not opposed to transitioning a child or  
9 transitioning a teenager or an adult. What I'm saying,  
10 that we should be able to educate, objectively, the 12:35:54  
11 parents and the child themselves, you see, so that they  
12 know the issues here.

13 And it's their child. They are legally  
14 responsible and they're morally and ethically  
15 responsible for the welfare of their child. And so I 12:36:11  
16 think they need to be informed.

17 And -- and what I'm saying is, in the past,  
18 doctors have recommended things, and I'm -- so I'm  
19 questioning the wisdom of making a strong  
20 recommendation because it's based on the allusion that 12:36:25  
21 we know what is best for this kid or this adult. And  
22 I'm saying, please, doctors, please be humble about  
23 what your knowledge is here. Please respect the  
24 limitations of your knowledge. That's all I'm saying.

25 So I -- I am objecting. I'm trying to teach 12:36:47

1 the world. If -- I know that sounds rather grandiose,  
2 but I'm trying to teach the world that based on our  
3 lack of information about the long-term follow-up, we  
4 can give options for the treatment of this condition  
5 and that option includes what you would call 12:37:03  
6 affirmative care.

7 But we should understand the scientific basis  
8 of affirmative care, you see, and we should understand  
9 the limitations, and we should understand that even the  
10 advocates of -- of gender-conforming surgery have 12:37:17  
11 published two papers recently saying that the -- the  
12 long-term psychosocial outcomes are not clear, that the  
13 benefit of -- of -- of genital surgery or breast  
14 surgery, in the long run, is not -- they're not clear.

15 And so people have undergone -- undertaken two 12:37:38  
16 studies in the last year or two years to prove that  
17 there are benefits. So why are we, in 2020 (sic),  
18 doing studies to prove there are benefits if -- if we  
19 already know the answer.

20 We don't know the answer. And I say because 12:37:56  
21 we don't know the answer, there's an ethical  
22 responsibility, a professional responsibility, to teach  
23 the parents, teach the adult what is known and what is  
24 not known.

25 What they decide is their business. It's 12:38:12

1       their prerog- -- it's their prerogative. It's their  
2       child. It's their seven-year-old. It's not my  
3       seven-year-old. See? It's not your seven-year-old.  
4       It's not your 14-year-old. It's theirs. And it's a  
5       weighted decision. And the idea that it's not a                   12:38:25  
6       weighted decision requires you to be an ostrich and  
7       bury your head in the sand.

8           Q     Do you think that politicians should be making  
9       that decision?

10           MR. BROOKS: Objection.                                   12:38:36

11           THE WITNESS: Well, I -- I do ask myself the  
12       question who should be making decisions about the  
13       delivery of medical care, you see. And I do realize  
14       that in some circumstances, politicians make decisions  
15       that influence medical care and medical treatment.           12:38:55

16           I don't know the answer to that question, but  
17       I don't know that doctors per se who are not informed  
18       about the -- about the state of science really should  
19       be making these decisions with the illusion that they  
20       know best. I am not sure politicians know what's best.       12:39:16  
21       I mean, when it comes to politicians, you know, we --  
22       we all have skepticism.

23           But nowadays, what -- who is making decisions  
24       are -- are judges, you see. I don't think juries as  
25       much as judges and -- and state legislature and               12:39:35

1 governors are making decisions. I don't like that  
2 either.

3 I would prefer that an informed medical  
4 professional -- I would -- I would prefer that doctors  
5 make these decisions based upon accurate scientific 12:39:54  
6 information and not political ideology and not mixing  
7 up civil rights concerns with medical decision-making.

8 So I realize we're in a -- this is a morass,  
9 and I -- all I -- all -- my point to you today is let's  
10 look at the science and let -- let the doctors decide 12:40:21  
11 or let the politicians decide, let the governors  
12 decide, let the judges decide, but on the basis of  
13 science.

14 Q And are you aware of any scientific study  
15 showing that affirmative care practitioners in the 12:40:40  
16 United States are providing rapid affirmation, a  
17 scientific study, not just anecdotal reports?

18 A There was a study out of the UK about 20 years  
19 ago. I kind of think the author of the study was  
20 M-O-L-E. I'm not certain. And they did a follow-up 12:41:10  
21 study of people who were given sex reassignment surgery  
22 immediately because they asked for it, with -- with  
23 very little screening, versus people who were treated  
24 as usual, because in that days, people had psychiatric  
25 evaluation and psychotherapy, and I think they found in 12:41:33

Page 135



1 the small numbers of patients that they operated on  
2 versus the people who weren't operated on, that there  
3 seemed to be -- they seemed to be happier in the short  
4 term after surgery than the people who didn't have  
5 surgery.

12:41:49

6 But you know what I've been saying to you  
7 in -- well, maybe I haven't quite said it yet. What  
8 I'm saying is, when we come to evaluate the impact of  
9 these treatments, we need to agree upon -- we have to  
10 have a consensus, and it should be an international  
11 consensus, about what is the ideal way to evaluate the  
12 effects of these treatments.

12:42:07

13 Should it be, like, at six months, at  
14 twelve months, should it be at six -- two years,  
15 five years, ten years. And we should agree upon the  
16 mecha- -- the measurements that we're going to use  
17 prior to actually doing the study so that we all agree  
18 upon both -- both the strengths and the limitations of  
19 the methods.

12:42:28

20 So what I'm --

12:42:42

21 Q Yeah, maybe my question --

22 A What I'm trying to do is to refine the  
23 requirements to answer your question.

24 Q Thank you. And I think maybe my question may  
25 have been unclear.

12:42:55

Page 136

1                   What I'm trying to figure out is that you've  
2       testified about a perception that there's this  
3       widespread practice of providing rapid affirmation  
4       service in the U.S.; is that fair?

5	A	Yes, I do have that perception.	12:43:05
---	---	---------------------------------	----------

6 Q And what I'm trying to figure out, is there  
7 any kind of scientific or other -- otherwise kind of an  
8 analysis of a -- of that healthcare market to determine  
9 whether in fact that is actually happening or in fact  
10 whether these are just anecdotal occurrences that 12:43:22  
11 you've learned of?

12           A     There -- your question is one of a series of  
13       questions that I would have to answer as far as I know,  
14       there are not -- there are not respected scientific  
15       methods demonstrating my -- my impression.                      12:43:44

16 Q Thank you. If you could turn to page --  
17 paragraph 6 of your -- or it's probably on the same  
18 page you have there, but I'm going to just ask a  
19 question about paragraph 6 of your declaration -- or  
20 your report. 12:44:02

21                   And you talk about -- you can read the whole  
22    thing.  I'm not trying to misread it into the record,  
23    but I wanted to focus on the sentence that says (as  
24    read):

25	I have at one time or another	12:44:13
----	-------------------------------	----------

1 recommended or prescribed or supported  
2 social transition, cross-sex hormones,  
3 and surgery for particular patients,  
4 but only after extensive diagnostic  
5 and psychotherapeutic work." 12:44:26

6 Do you see that?

7 A I do.

8 Q Have you ever recommended cross-sex hormones  
9 for a minor patient?

10 A No. 12:44:37

11 Q Have you ever prescribed cross-sex hormones  
12 for a minor patient?

13 A Is that a different question than you just  
14 asked me?

15 Q Well, you have recommended or prescribed or 12:44:53  
16 supported, and so I could go into asking you what the  
17 difference is, but I just figured I'd ask you -- is  
18 there a differences between recommended, prescribed and  
19 supported?

20 A Oh, yes. I feel like my view of my role is to 12:45:08  
21 write a letter of recommendation describing the patient  
22 in detail, the -- the diagnosis, the patient's  
23 sensibilities, whether I think this would be beneficial  
24 to the patient at this time in his life.

25 The last person that I wrote, I was doing 12:45:26

Page 138

1 psychotherapy with a young person, starting at age 16,  
2 and saw this person over the course of a year and a  
3 half. I promised that if they continued talking to me,  
4 at the end of the time, I -- if patient still wanted  
5 hormones, I would give hormone- -- I -- I wrote a 12:45:47  
6 letter of recommendation.

7 And I did write a letter of recommendation,  
8 and the patient did take hormones. He went off to  
9 college, failed miserably at college, transferred  
10 college, and I sadly I tell you, and I -- I sadly tell 12:46:01  
11 you, this person died of a heroin overdose in his dorm  
12 room at Ohio State University.

13 And I know from the parents, postmortem, that  
14 he acquired a girlfriend, and he then said that it's  
15 not so bad -- he's rethinking this matter. It's not so 12:46:23  
16 bad being -- being a male and having sex with someone.

17 But I don't know whether -- I -- his heroin  
18 overdose, which was his third heroin overdose, was  
19 accidental death or suicide.

20 So I have provided hormones. I do have that 12:46:40  
21 really negative taste in my mouth from that experience.  
22 I don't -- I don't -- I don't have remorse about giving  
23 hormones to this person because I promised that if --  
24 that it is his decision.

25 His parents weren't happy with that decision, 12:47:02

1 but they also agreed with the decision. And now  
2 they're, of course, in perpetual mourning for their  
3 deceased 18-year-old child.

4 So, yes, listen, I also have given hormones to  
5 someone else who is living okay, who is not made any 12:47:20  
6 suicide attempts. But it is, as I described in that  
7 paragraph, after I get to know these people. And to  
8 tell you, I -- as best as I can tell, they appreciate  
9 that.

10 Q Thank you. I'm just -- sorry for the -- for 12:47:35  
11 the person that you -- your -- your patient that you  
12 mentioned, the -- the 18-year-old, I'm -- I'm sorry to  
13 hear about that.

14 Sorry, when was that? What -- what time  
15 period? 12:47:47

16 A That was --

17 Q Datewise.

18 A -- March 17th, 2021.

19 Q And did you prescribe the -- or, sorry, write  
20 a letter for the hormones before the person was 18 or 12:47:58  
21 only once they were 18?

22 A I think the person turned 18 in August or  
23 September, and I think I wrote the letter right near  
24 the person's birthday. Whether it was before or after,  
25 I'm not sure. 12:48:19

Page 140

1 Q How about social transition, have you ever  
2 recommended or prescribed or supported social  
3 transition for a minor?

4 A A minor being someone less than 18?

5 Q Correct. 12:48:34

6 A Have I ever recommended, prescribed -- I have  
7 never prescribed. I have met people who already had  
8 social transition, and I had supported them even in the  
9 face of their parents' objection. But I don't think I  
10 have ever prescribed social transition to a person. I 12:49:00  
11 cooperate with it. I recognize that -- I recognize  
12 that it is the patient's decision. And while I may not  
13 have thought it was a wise decision to transition or to  
14 surreptitiously take hormones, you know, from China or  
15 something, I -- I don't interfere with it. I just talk 12:49:30  
16 about it.

17 So -- but if you're really asking have I said,  
18 oh, Parents, you should transition your child, I think  
19 the answer is no.

20 Q Yeah. So I'm trying to -- that's -- thank you 12:49:43  
21 for clarifying that. I -- I'm trying to figure out if  
22 you've supported the transition of a -- the social  
23 transition of any minor patients.

24 A Yes.

25 MR. BROOKS: Objection; vague. 12:49:53

Page 141

1 BY MS. HARTNETT:

2 Q When was the last time you supported the  
3 social transition of a minor patient?

4 A Two years ago, I'm guessing.

5 Q Okay. Let me -- do you know who B.P.J. -- 12:50:08  
6 B.P.J. is the plaintiff in this case.

7 Do you know if B.P.J. is a girl or a boy?

8 A I know nothing about B.P.J.

9 Q So you've reviewed none of her medical records  
10 or anything like that? 12:50:32

11 A Yeah, I would presume that this is a trans  
12 boy -- a trans girl who was born a -- a boy, but I  
13 wouldn't -- I have no certainty.

14 Q What makes you presume that?

15 A Well, because trans -- trans girls 12:50:47  
16 generally -- I mean -- how should I say it? Trans  
17 girls -- trans adolescent girls generally don't -- wait  
18 a -- I'm getting confused here. Excuse me.

19 I presume that B.P.J. is an -- was born and  
20 assigned and is a natal -- was a natal male. 12:51:17

21 But if it's a natal female, I -- I've not  
22 heard anything where a natal female becomes a trans boy  
23 and wants to compete against boys. If there is a  
24 lawsuit like that, that has been raised, I am unaware  
25 of it. 12:51:43

Page 142

1           When I read these things in the newspaper,  
2       it's -- it's -- they're -- they're always about natal  
3       boys who live as trans women or girls and want to  
4       compete against women. So that's why I presume that  
5       B.P.J. must be a natal male. 12:52:04

6           But because my role in this case had nothing  
7       to do with the athletic side, it's just to -- to  
8       provide some basis of -- some background basis on the  
9       science of transgender knowledge and the lack of  
10      knowledge, I didn't spend time investigating that. 12:52:23

11          Q     Okay. And are you familiar with the law  
12      that's being challenged in this case that's called  
13      H.B. 3293?

14          A     No.

15          Q     Could we just turn to page 20 of your 12:52:42  
16      declaration, paragraph 50 -- or your -- sorry, I'm  
17      saying declaration. I mean report.

18               MR. BROOKS: We're getting there.

19               MS. HARTNETT: No, take your time. Page 20,  
20      paragraph 50. 12:53:00

21               MR. BROOKS: Let's see. This is under -- just  
22      simply -- since I can't fit it all on the screen at  
23      once, it's under the heading that says, "The  
24      affirmation therapy model (model #4)." And now, under  
25      that, I have paragraph 50 showing on the screen. 12:53:14

Page 143



1 MS. HARTNETT: There is a way to, I believe,  
2 make that -- I don't know if he needs that to be that  
3 large to read it, but there is -- if you hover over the  
4 document, you can zoom in or out.

5 MR. BROOKS: Perhaps. But this is, I think, 12:53:31  
6 much smaller, and it would be hard to read.

7 THE WITNESS: I have the entire paragraph 50  
8 in front of me.

9 BY MS. HARTNETT:

10 Q Okay. Thank you. 12:53:41

11 So I was looking through your report, trying  
12 to see if there was a connection to the context here,  
13 which is this sport -- whether the plaintiff can play  
14 sports, and I'm just looking -- you can look at all of  
15 paragraph 50, if you need to, but I'm going to be 12:53:51  
16 focused on -- well, feel free to take a look.

17 But you're -- under this part called "the  
18 affirmation therapy model." That's the heading that's  
19 above paragraph 50.

20 Do you see that? 12:54:04

21 A Yes.

22 Q And you're referring to -- what -- you say  
23 that -- you're referring to some advocates and  
24 practitioners that go much further. That's in your  
25 second line there. And then I'm going to just read one 12:54:14

Page 144

1 sentence in the middle of the paragraph. (As read):

2 "They argue that the child should be  
3 comprehensively resocialized in grade  
4 school to (sic) their aspired-to  
5 gender. As I understand it, this is  
6 asserted as a reason why male students  
7 who assert a female gender identity  
8 must be permitted to compete in girls'  
9 or women's athletic events."

12:54:27

10 Did I read that correctly?

12:54:37

11 A Yes, you did.

12 MR. BROOKS: And I will -- well, you can ask a  
13 question. I'm going to ask the witness to read the  
14 entire paragraph so we don't lose the --

15 MS. HARTNETT: He should feel free. I'm  
16 not -- this is not a trick.

12:54:50

17 MR. BROOKS: Nope.

18 BY MS. HARTNETT:

19 Q Let me know when you're ready.

20 A I've read the paragraph.

12:55:22

21 Q Do you know whether the law being challenged  
22 in this case applies to grade school?

23 A I don't -- I don't know the law being  
24 challenged here.

25 Q So you don't know whether the law at issue

12:55:35

Page 145

1 requires that transgender youth be comprehensively  
2 resocialized; is that fair?

3 MR. BROOKS: Objection.

4 THE WITNESS: When I talk about  
5 comprehensively resocialized, it was not in 12:55:51  
6 relationship to this law; it was in relationship to the  
7 American Academy of Pediatrics' recent study, I think  
8 in 2018, by Rafferty, et al., where it was asserting --  
9 they were asserting such things that I'm summarizing  
10 here. 12:56:18

11 And, see, for them, participation in athletics  
12 just follows their fundamental assumption that they  
13 know what's best for these children even though they  
14 have no long-term -- they don't even have adolescent  
15 follow-up, let alone adult follow-up. 12:56:35

16 And so I just think that the case of  
17 athletics -- the issue of athletics is a secondary  
18 derivative issue about the more fundamental matter of  
19 when and how, to what extent, and before -- what  
20 requirements are necessary before we socialize a child, 12:56:55  
21 you see.

22 So if you think about the -- your issue today  
23 about athletics, it's what I would call a downstream  
24 issue, downstream from the fundamental thing that we  
25 were talking about before the last break about what are 12:57:15

1 the requirements to ethically enable parents to make  
2 this decision without doctors pretending like they know  
3 what's best for a seven-year-old or an eight-year-old  
4 or a 12-year-old or a 15-year-old, you see.

5 So this is a downstream question about which I 12:57:34  
6 feel I have no legitimacy to pretend expertise.

7 So I think every question you ask me about  
8 this, I'm going to have to say, listen, this is not  
9 my -- this is not my wheelhouse. This is not my  
10 knowledge base. My knowledge base is about what we 12:57:54  
11 were talking about, you know, about the evaluation of  
12 children and teens.

13 BY MS. HARTNETT:

14 Q So here, where you say, "this is asserted as a  
15 reason why male students who assert a female gender 12:58:07  
16 identity must be permitted to compete in girls' or  
17 women's athletic events," when you say -- asserted by  
18 whom? Is it the American Academy of Pediatrics? Is  
19 that who you're referring to there?

20 A No, I don't think it's entirely that. I think 12:58:23  
21 it has to -- you know, this is a -- this is a big  
22 cultural issue in many, many states. They made -- the  
23 NCAA, you know, the high school athletic associations,  
24 whatever the names, the acronyms of those  
25 organizations, they have made policies based upon 12:58:48

Page 147

1 information that they've gotten from various, quote,  
2 expert groups, and -- and there is this -- in education  
3 services today, there is this enormous emphasis on  
4 diversity and support for all forms of diversity, and  
5 so I -- I think the answer is not it's just from the 12:59:12  
6 American Academy of Pediatrics. I think the American  
7 Academy of Pediatrics is influenced by these larger  
8 social trends that have recognized how much harm we've  
9 done to various -- to women, for example, or to African  
10 Americans or to Asians, and we are trying, as a 12:59:34  
11 society, to make things more open and to -- to  
12 represent more people in the public discourse in arts,  
13 in music, in the theater and so forth.

14 So there's just a broad, broad cultural trend  
15 towards being much more inclusive, you see, and -- and 12:59:52  
16 I just think the trends -- athletic issue must be  
17 viewed in terms of the larger social questions that are  
18 being answered in a political sense in our culture.

19 MR. BROOKS: Counsel, when you get to a  
20 breaking point, I think it is one o'clock, and it would 01:00:10  
21 be a good time to take a lunch break.

22 MS. HARTNETT: We can break now. I have a  
23 couple more questions on this paragraph, but we can  
24 pick it up after lunch. What would you prefer?

25 MR. BROOKS: You can finish up the paragraph. 01:00:27

1 MS. HARTNETT: Sure.

2 BY MS. HARTNETT:

3 Q So -- so is it your view that allowing a  
4 transgender youth to participate on the team of  
5 their -- the sex that they present as, is that a 01:00:39  
6 psychotherapeutic intervention that would dramatically  
7 change the outcome for that child?

8 A I'm not certain.

9 Q What is your concern -- I'm sorry, please.

10 A I think if -- I think if a child, let's say a 01:01:02  
11 14-year-old, wants to run track or play a sport as a  
12 member of a female -- the female side of the sport and  
13 if the school or the -- the State or the -- the  
14 organization that -- that organizes high school  
15 athletics or junior high school athletics says, no, you 01:01:31  
16 can't because you were a natal male and you -- trans is  
17 not accepted as -- for athletic purposes, I think that  
18 person would be disappointed. I think that would be  
19 disappointed. And disappointment may look like  
20 depression. It may increase the person's anxiety for a 01:01:52  
21 while. But like many, all of us get disappointed in  
22 life, and, you know, we deal with it. And sometimes we  
23 grow from our disappointment.

24 So I would think they would be disappointed.

25 Whether that is to be considered harm, you see, I don't 01:02:12

Page 149

1 think we would -- we should, just on the basis of  
2 disappointment, refer to that as harm. Harm is a  
3 different concept, you see.

4 And -- so I guess the answer to your question  
5 is I'm not sure. 01:02:32

6 Q But do you think that permitting them to play  
7 with -- in that example, allowing the 14-year-old  
8 person that identifies and is a girl to play with the  
9 girl team, do you believe that that would make them  
10 more likely to continue to identify as transgender when 01:02:50  
11 they otherwise would not?

12 MR. BROOKS: Objection; ambiguous.

13 THE WITNESS: They would otherwise continue --  
14 you -- you mean -- if I understand --

15 BY MS. HARTNETT: 01:03:05

16 Q I'm sorry, I'll ask a better questions.

17 I'm just trying to figure out if your opinion  
18 is that allowing transgender, let's just say,  
19 adolescents to play on sports teams that match their  
20 gender identity will cause them to continue to identify 01:03:15  
21 as transgender when they otherwise would not.

22 A I have no idea the answer to that question. I  
23 would imagine that they would continue to identify as a  
24 trans female, but I don't know what would happen to  
25 their identity if they didn't. That was the other side 01:03:40

Page 150

1 of your question, the last part of your questions.

2 So I guess I can answer part of the question.

3 It would be my opinion, if we allowed a child  
4 who currently identifies as a trans girl to participate  
5 in a girl's athletic -- organized athletics, that that 01:03:57  
6 would do nothing -- that would -- that would reinforce  
7 the idea that she continues -- that she is a trans  
8 girl. Not that she is a girl, but that she's a trans  
9 girl. That's -- I think that would be my opinion.

10 About the other aspect to your question, I 01:04:20  
11 don't know the answer.

12 Q But is your opinion that there's a -- is that  
13 a -- in your opinion, is there something wrong with  
14 reinforcing the girl being on -- sorry -- the girl's  
15 gender identity of being on the team? 01:04:33

16 Like, do you have a problem with that, or are  
17 you okay with the 14-year-old girl playing on the --  
18 transgender girl playing on the girls' team if the  
19 rules allow it?

20 MR. BROOKS: Objection; vague, compound. 01:04:42

21 THE WITNESS: If you -- if you look narrowly  
22 at the individual girl, we get one set of  
23 considerations.

24 If we look at fairness, if we look at the  
25 perspective of the other girls, the natal girls who are 01:05:07

Page 151



1 participating, we get another perspective.

2 If we look at the parents' perspective of the  
3 very talented athletes who are natal girls who may be  
4 defeated by these trans girls, we get yet a third or  
5 fourth perspective. 01:05:31

6 BY MS. HARTNETT:

7 Q Well, that's not your area of expertise;  
8 correct?

9 A But you -- you just anticipated what I was  
10 going to say. I mean, you're asking me opinions that I 01:05:39  
11 have no legitimate expertise to answer. I -- I'm  
12 just -- I'm separating the perspectives for you. And I  
13 say your -- your question is not as simple as it  
14 sounded because there are these other perspectives to  
15 be considered which people other than me are going to 01:05:57  
16 consider.

17 There is -- shall I repeat?

18 There is the child --

19 Q No, I don't think so. I don't think you  
20 should repeat. But what I do -- would like would be 01:06:08  
21 before we have lunch, just an answer, which is do you  
22 object --

23 MS. HARTNETT: Can you -- can the reporter  
24 read back my last question, please.

25 THE REPORTER: Yes. 01:06:15

Page 152

1 (Record read.)

2 MR. BROOKS: Objection; compound, form of the  
3 question, vague.

4 You can answer, if you are able and know what  
5 the question is. 01:07:02

6 MS. HARTNETT: That's -- enough coaching.

7 THE WITNESS: Pardon me? I didn't hear what  
8 you just said.

9 BY MS. HARTNETT:

10 Q I was telling your counsel to please stop 01:07:07  
11 coaching you. And I can ask a better question.

12 A Oh.

13 Q Is it your perspective that allowing a  
14 transgender girl to participate on a girl team,  
15 consistent with her gender identity, is harmful to the 01:07:18  
16 transgender girl?

17 A No, I don't think it's harmful in the short  
18 run to the transgender girl. In the long run, if the  
19 transgender girl detransitions, say, in five years, I  
20 wonder what he will now think about what happened five 01:07:36  
21 years before when she was competing against girls as a  
22 girl.

23 But in the -- I presume your question is in  
24 the short term, you see? And I guess in the short  
25 term, I don't think it would harm the child to the 01:07:58

Page 153

1 extent that it reinforces their current identity.

2 But as you may or may not know, gender  
3 identity can evolve over time. And so when people  
4 detransition and return to presenting themselves as a  
5 boy and thinking of themselves as a boy, they then have 01:08:20  
6 to -- they then have to consider what happened when  
7 they were -- when they were presenting themselves as a  
8 girl and believing that they were a girl. They no  
9 longer believe that they're a girl, but they did back  
10 then, you see? 01:08:39

11 So I don't know, I don't think anybody knows,  
12 what implications, what harm, might come from their --  
13 what retrospective view of the harm that -- that they  
14 cause themselves by presenting -- by competing against  
15 girls. So -- 01:08:58

16 Q Does anybody know the implications of the  
17 disappointment that the transgender girl might  
18 experience from exclusion, or is it similarly  
19 indeterminant?

20 MR. BROOKS: Objection. 01:09:09

21 THE WITNESS: Well, I -- I think I've already  
22 answered the question, that disappointment -- I would  
23 expect it if a -- if the girl -- the trans girl wanted  
24 to participate and was prohibited by some larger force  
25 from participating, they would be disappointed, and it 01:09:24

Page 154

1 may have -- it may have -- it -- and I couldn't predict  
2 the outcome of the disappointment, whether it would  
3 precipitate depression or whether it would precipitate  
4 giving up their trans identity, as being unrealistic,  
5 that other people are saying I am very unrealistic 01:09:47  
6 and -- and this is unfair and I'm asking for an unfair  
7 advantage.

8 So, you know, I can't -- I don't -- these are  
9 not areas that I -- that anyone has had any experience  
10 with, you see. And -- and I -- it's hard for me to 01:10:01  
11 give you a simple answer.

12 It feels to me, Ms. Hartnett, that you are  
13 trying to get me to answer a question in a certain way,  
14 and I'm just trying to say I think it's more  
15 complicated. And I think you're asking me to give an 01:10:16  
16 opinion about which I don't have adequate knowledge,  
17 and I don't -- that's all. Period.

18 Lunch.

19 MS. HARTNETT: Let's go to lunch.

20 THE VIDEOGRAPHER: We are off the record at 01:10:35  
21 1:11 p.m.

22 (Lunch recess.)

23 THE VIDEOGRAPHER: We are on the record at  
24 2:11 p.m.

25 MS. HARTNETT: Thank you. 02:11:22

Page 155

1 BY MS. HARTNETT:

2 Q Welcome back, Dr. Levine.

3 I think before the break, we had -- I'm not

4 sure what page you have up, but I -- I'm at

5 paragraph 50 of the declaration. 02:11:31

6 A So are -- so am I.

7 Q Okay. Let's -- I was trying to -- and the

8 reason why we were talking about that is there was a

9 mention of athletic events there, and the other mention

10 of athletic events in your declaration is at 02:11:43

11 paragraph 130. So if you could go to 130, I'll have a

12 question about that.

13 Let me know when you get to 130, please.

14 MR BROOKS: We are at 130, which fits on the

15 screen. 02:12:14

16 BY MS. HARTNETT:

17 Q Great. So here in this paragraph, you say, in

18 the third sentence, the following (as read):

19 "It is evident from the scientific

20 literature that engaging in therapy 02:12:26

21 that encourages social transition

22 before or during puberty—which would

23 include participation on athletic

24 teams designated for the opposite

25 sex—is a psychotherapeutic 02:12:37

Page 156

1 intervention that dramatically changes  
2 outcomes."

3 Do you see that?

4 A I do.

5 Q And you don't know if H.B. 3293 applies to 02:12:46  
6 prepubertal kids; right?

7 A I'm sorry, would you repeat that question.

8 Q You don't know if H.B. 3293 applies to  
9 prepubertal kids?

10 A I already testified that I don't know the 02:13:03  
11 content of the deal.

12 Q So is it your opinion that allowing  
13 transgender children and adolescents to play on sports  
14 teams will continue -- will cause them to continue to  
15 identify as transgender? 02:13:21

16 A I think it -- well -- well, you know, my  
17 hesitance is because you used the word "cause."

18 Q I'm just trying to --

19 A A child --

20 (Simultaneous speaking.) 02:14:10

21 BY MS. HARTNETT:

22 Q Oh, sorry, go ahead.

23 A That's why I have taken so long. I'm -- I'm  
24 thinking about the word "cause" and its implications in  
25 my mind. I -- I do think that various aspects of 02:14:20

Page 157

1 social transition tend to continue the child on a life  
2 course consistent with trans life, whether or not  
3 they're aware of the risk that they're entailing or  
4 not.

5 I think that's as close to an answer I can 02:14:45  
6 give you.

7 Q Are you aware of any research indicating that  
8 by preventing children from playing on sports teams  
9 consistent with their gender identity that will prevent  
10 them from continuing to identify as transgender going 02:14:59  
11 forward?

12 A I'm not aware of research literature about  
13 athletic teams and its impact, positive or negative, at  
14 all. I'm totally unaware.

15 Q Okay. Do you think that by excluding 02:15:14  
16 transgender girls from playing on the girls' team the  
17 law that's being challenged in this case stigmatizes  
18 transgender girls?

19 MR. BROOKS: Objection.

20 THE WITNESS: I think it may disappoint 02:15:48  
21 transgender girls. Stigma has another concept. You  
22 know, it has to do with social things.

23 I -- I think a reasonable mental health  
24 professional could assume that if a child wanted  
25 something and was prohibited from it, they would be 02:16:03

Page 158

1 disappointed, at least initially.

2 Other than that, I -- I don't care to comment.

3 BY MS. HARTNETT:

4 Q Well, say a child wants a cookie and they  
5 aren't allowed to have it. That's disappointing; 02:16:23  
6 right?

7 A Yes.

8 Q Is the disappointment that a transgender child  
9 would have from being excluded from a sports team  
10 consistent with their gender identity essentially that, 02:16:31  
11 equivalent of the cookie denial?

12 MR. BROOKS: Objection; calls for speculation.

13 THE WITNESS: I don't know if you even put my  
14 smile into the text.

15 Obviously, you know, there -- there are 02:16:57  
16 degrees of disappointment in the universe. And to  
17 equate that with a cookie, I don't know. I prefer not  
18 to even answer that question.

19 BY MS. HARTNETT:

20 Q Well, your -- your point of view is that 02:17:10  
21 people that experience being transgender also generally  
22 experience a wide range of other distressing feelings  
23 and conditions; correct?

24 A My point of view is what?

25 Q That people who are transgender also 02:17:27

Page 159



1 experience a wide range of other concerns and -- and  
2 issues; correct?

3 A Yes, I think -- yes.

4 Q That they're subject to serious mental health  
5 issues, that's your point of view; correct? 02:17:47

6 A I think they're apt to encounter a number of  
7 frustrations in their future lives that could add to  
8 their social anxiety, their sense of pervasive sadness  
9 and it lead to solving the problem in ineffective ways,  
10 like substance abuse. 02:18:13

11 So, yes, I do think that being transgender,  
12 for -- for many, many people, poses adaptive challenges  
13 in the present and in the future.

14 Q How do you know that that's based on being  
15 transgender as opposed to how the transgender people 02:18:34  
16 are being treated, or do you not distinguish between  
17 the two?

18 A Because -- because some of the -- in children,  
19 some of the psychiatric problems that they have are --  
20 occur well before there's any awareness of the society. 02:18:54

21 And in every cross-sectional study of adults  
22 in the transgender community have shown that the --  
23 that they're a vulnerable population and they're  
24 vulnerable to many psychiatric difficulties, and the  
25 common explanation for that, among trans advocates, is 02:19:19

Page 160

1       that it's entirely due to social discrimination whereas  
2       I think if you look at the premorbid and the  
3       accompanying psychiatric difficulties of many trans  
4       people, these -- these -- the social discrimination has  
5       only added to the -- the internalized conflicts about       02:19:37  
6       what they're doing.

7               So I think it's far more complicated than it's  
8       merely a result of stigma, so to speak.  
9       "Discrimination" would be a better word, I guess.

10           Q     Yeah, I'm -- thank you. And I'm trying to       02:19:54  
11       reconcile that view with the notion that excluding a  
12       transgender youth who, in your view, might be subject  
13       to these various preexisting psychological problems,  
14       why -- where you're having -- where -- what is the  
15       basis for you believing it would just be a simple       02:20:09  
16       source of disappointment for the trans youth to be  
17       excluded from a team, consistent with their gender  
18       identity, as opposed to a more severe harm?

19           MR. BROOKS: Objection.

20           THE WITNESS: Number one, I don't think       02:20:22  
21       there's any research in this area. So whatever --  
22       whatever you would like to conclude, I think there's no  
23       basis for it.

24               I'm just trying to understand, based on my  
25       knowledge of human beings, that for one person, it       02:20:37

1 would be a major disappointment and it might lead to  
2 harm for that person, and for another person, it might  
3 be a major disappointment that leads to no harm, and  
4 for another person, it might be, oh, well, so what, and  
5 it's not a big -- not a big deal. 02:20:52

6 Every study of human beings shows the variety  
7 of human beings. And we can't predict that if you  
8 exclude a child from anything on the basis of their  
9 gender identity, that it's going to cause --  
10 automatically, you can guarantee it will cause harm. 02:21:12  
11 There's just no reason to think that.

12 It doesn't mean there isn't a child who might  
13 not be harmed, but it doesn't mean that all the  
14 children will be harmed, and it doesn't mean that the  
15 harm will follow in the same manifestation. 02:21:27

16 Human beings have a variety of responses to  
17 everything.

18 BY MS. HARTNETT:

19 Q So is your view for the trans girls that would  
20 be excluded under a policy of not allowing them to play 02:21:43  
21 on the team consistent with their gender identity, that  
22 they should just toughen up and stomach the  
23 disappointment?

24 MR. BROOKS: Objection.

25 THE WITNESS: You're putting words in my 02:21:55

Page 162

1 mouth. That's not my view. That's not how I was --  
2 that's not how I have spoken about it. You're  
3 summarizing it in a very negative way for me. I don't  
4 accept your language. It's not me.

5 BY MS. HARTNETT: 02:22:09

6 Q Okay. You don't have to.

7 How would you put it?

8 A I already put it.

9 MR. BROOKS: Objection.

10 BY MS. HARTNETT: 02:22:15

11 Q You mentioned before the break that you also,  
12 in your view, had to look at the potential harms or the  
13 effects on the other people at issue, and I think you  
14 mentioned the other girls on the team; is -- did I hear  
15 you right? 02:22:26

16 A I think I did mention that.

17 Q Are you giving an expert opinion in this case  
18 about the harm to girls on a team where they would have  
19 to include a transgender girl?

20 A I don't know how many times, Ms. Hartnett, I 02:22:41  
21 have to tell you that I don't consider myself having an  
22 expert opinion on this subject. I have stated what I  
23 stated, but I don't -- I don't -- I don't feel like I  
24 represent an expert.

25 And so the answer to your question is, no, I 02:22:59

Page 163

1 don't have an expert opinion on that.

2 Q Thank you. I have a few questions about your  
3 expert report. I'm just going to go back to the  
4 beginning and go through sequentially, and I'll --  
5 please feel free to read the paragraphs I cite to you 02:23:16  
6 while I'm asking you questions.

7 My first one is going to be back on  
8 paragraph 5, page 2.

9 MR. BROOKS: Getting there.

10 Paragraph 5 is on the screen. 02:23:36

11 MS. HARTNETT: Yeah, we were there before.

12 BY MS. HARTNETT:

13 Q I just had a question about -- so I was  
14 comparing this report to the declaration that was  
15 submitted at the beginning of the case. That was the 02:23:47  
16 one from the Washington State declaration that had been  
17 attached to an earlier motion in the case. And that's  
18 something I introduced as Exhibit 86. So if you need  
19 to refer to it, feel free.

20 But I will just represent to you that in the 02:24:02  
21 version of paragraph 5 that was in your earlier  
22 declaration, you had certain language that's no longer  
23 in this report. I'll read it to you and then -- just  
24 curious as to why you removed it.

25 You -- this is the declaration that you signed 02:24:15

Page 164

1 in May of 2021. (As read):

2 "As the incidence of gender dysphoria  
3 has increased among children and youth  
4 in recent years, larger numbers of  
5 minors presenting with actual or  
6 potential gender dysphoria have  
7 presented to our clinic.

02:24:29

8 I currently am providing psychotherapy  
9 for several minors in this area. I  
10 also counsel distressed parents of  
11 these teens."

02:24:41

12 Do you know why you removed that language from  
13 your -- this report?

14 MR. BROOKS: And, counsel, are -- asking that  
15 question, are you representing that that or similar  
16 language doesn't appear somewhere else in the report?

02:24:54

17 MS. HARTNETT: I was unable to find that  
18 language in this report. It was in paragraph 4 of the  
19 PI declaration, which is now paragraph 5 of this  
20 report, and I was not able to find that language.

02:25:09

21 THE WITNESS: I would imagine the answer to  
22 the question is I didn't think it was relevant to this  
23 particular document.

24 Please understand, in preparing this document,  
25 I did not read the -- Exhibit 86.

02:25:29

Page 165

1 BY MS. HARTNETT:

2 Q Is it true that larger numbers of minors have  
3 been presenting with actual or potential gender  
4 dysphoria to your clinic?

5 A No. It's true that across the world larger 02:25:46  
6 numbers of minors are requesting services for gender.  
7 That's an epidemiologic phenomenon that exists on four  
8 continents.

9 Q Is it true that you are currently providing  
10 psychotherapy for several minors in this area? 02:26:07

11 A Yes.

12 Q How many?

13 A It depends on what era you're -- what month,  
14 what week, what -- what year you're talking about. If  
15 you're talking about within the last year, I would say 02:26:22  
16 probably four or five kids.

17 Q Can you give me the ages of those kids?

18 A Probably from 14 to 17.

19 Q And how many of those have you seen more than  
20 one time? 02:26:41

21 A Each of them.

22 You should -- well, okay.

23 Oh, one of them I've seen once, I'm sorry.

24 I -- let me correct that.

25 Q For the other four, do you see them on a 02:27:01

Page 166

1 monthly basis?

2 A No. I -- I tend to see them more often.

3 Q Are there any of those patients that you have  
4 seen on a monthly or less basis, other than the one you  
5 only saw once?

02:27:21

6 A Well, I hear from patients I see in the past  
7 periodically, sometimes. I hear from their parents. I  
8 sometimes hear from them. But it's -- it's not  
9 anything regular.

10 Q Yeah, I'm -- thank you. I'm just trying to  
11 understand. There was a statement made in your  
12 May 2021 declaration that you were currently providing  
13 psychotherapy for several minors in this area, and I'm  
14 just trying to figure out, is that actually true today?

02:27:45

15 A No, it's not true today to the same extent  
16 that it was when I wrote the original -- the Tingley  
17 declaration.

02:27:59

18 Q Thank you. Moving down in here, you have on  
19 page -- paragraph 7 and paragraph 8, you identify a  
20 couple of cases where you previously provided  
21 testimony.

02:28:15

22 A Yes.

23 Q There's the -- the case in the Eastern  
24 District of Massachusetts, in the First Circuit, that  
25 you refer to in paragraph 7.

02:28:29

Page 167



1 Do you see that?

2 A Yes.

3 Q And then there's the Younger litigation in  
4 paragraph 8.

5 Do you see that? 02:28:37

6 A Yes.

7 Q And you do cross-reference your CV list and  
8 then the Tavistock case.

9 Do you see that?

10 A Yes. 02:28:47

11 Q Why did you choose to highlight the  
12 Massachusetts and the Younger case here?

13 A Well, the Massachusetts case, under  
14 Judge Wolf, Judge Wolf asked me to be a judge's  
15 witness. That was the beginning of my legal 02:29:10  
16 involvement in that whole area of transgenderism. So I  
17 think that that's noteworthy. It's also noteworthy  
18 because that became -- among the DOC attorneys across  
19 the nation, that's a very landmark case, and it's often  
20 quoted in various other legal matters. 02:29:29

21 So it seemed to me that you ought to know that  
22 I began in that area in 2006 with Dr. -- with  
23 Judge Avery.

24 And what was the second part of your question?

25 Q Oh, the Younger case and why you included that 02:29:49

Page 168

1 here.

2 A I included that because that was my entry case  
3 into transgender children and the -- when parents don't  
4 agree on the treatment of their trans child and -- and  
5 courts are involved and -- I mean, that is not just 02:30:10  
6 happening in the Younger case. That's happening in  
7 other jurisdictions as well. And so I --

8 Q In the Younger -- oh, sorry.

9 A That that's the kind of thing you wanted to  
10 know. That is a credential, in a sense. Or I thought 02:30:26  
11 that you would like to read that case, if you could.

12 Q Are you aware the jury rejected the father's  
13 claim in the Younger case and awarded the  
14 decision-making to the mother?

15 MR. BROOKS: Objection; mischaracterizes the 02:30:43  
16 record.

17 THE WITNESS: One of my complaints about my  
18 participation is I -- I often am not informed about the  
19 outcome and the progress of the cases that I've  
20 testified in. 02:30:55

21 I did -- I did hear something like you --  
22 what -- what you said, but it seems to me that it was a  
23 more complicated decision than you summarized.

24 BY MS. HARTNETT:

25 Q Are you aware that -- of the more recent 02:31:14

Page 169

1 litigation in Texas regarding a directive from the  
2 attorney general about the investigation of the --  
3 sorry -- by the directive of state officials to  
4 investigate those providing transgender care for child  
5 abuse? Does that ring a bell? 02:31:30

6 MR. TRYON: Objection.

7 THE WITNESS: I only know about that because I  
8 read it in the papers. I have not --

9 BY MS. HARTNETT:

10 Q Okay. That's what I was going to ask you. 02:31:40

11 Were you involved in that? Were you asked to  
12 provide an expert opinion in that case?

13 A Never.

14 Q Is there a reason why you didn't include the  
15 Nosewor- -- Norsworthy case when you were summarizing 02:31:50  
16 your background here in paragraph 7 and 8?

17 A The Noseworthy case is one of, I don't know,  
18 seven or eight cases. I -- if you look at my CV, I'm  
19 sure it's listed in my CV.

20 This is a prisoner case. I didn't think it 02:32:22  
21 had to do with -- it just didn't seem it had to do with  
22 athletics and -- and teenagers.

23 Q Are you aware that your testimony was  
24 partially excluded in a case called Claire in Florida  
25 that was about the -- it was precluded with respect to 02:32:40

Page 170

1 the testimony about the motivations that plaintiffs had  
2 for seeking gender confirmation surgery.

3 A I was not --

4 MR. BROOKS: Objection.

5 THE WITNESS: I was not aware. 02:32:51

6 BY MS. HARTNETT:

7 Q Just flashing forward to paragraph 13 here.  
8 This is a paragraph where you're discussing, in part,  
9 Dr. Adkins' declaration. And my first question is, at  
10 the end of this paragraph, you talk about a life course 02:33:15  
11 perspective?

12 A Yes.

13 Q I'm just curious if that's a term that you  
14 coined or that's from somewhere else in the literature.

15 A If I took credit for coining that term, I 02:33:36  
16 think it would be -- I didn't -- I didn't coin the term  
17 "life perspective."

18 I'm a -- I'm a psychiatrist, and I see people  
19 throughout the life cycle, and so I am constantly  
20 confronted with the consequences of early life 02:33:54  
21 decisions and of behavioral patterns.

22 I have a natural life perspective on matters.  
23 I certainly didn't -- I don't believe I coined the  
24 term.

25 Q Well, I ask because it's in quotes, and so I'm 02:34:10

Page 171

1 just wondering if it's something that you refer to your  
2 method as the life course perspective or if that's a  
3 method I could look to in the literature somewhere.

4 A I think it's in quotes -- I think it's in  
5 quotes because I wanted to emphasize the perspective 02:34:25  
6 that this whole question about how to take care of  
7 trans youth needs to be understood, not does it make  
8 them happy in the current life, but what will it do to  
9 the whole course of their life.

10 And so by putting it into italics (sic), I -- 02:34:46  
11 I -- perhaps -- perhaps I shouldn't have done that, but  
12 I was just trying to bring the reader's attention to  
13 the perspective here that the decisions that are made  
14 in teenage years, for example, or in their 20s or in  
15 their 30s have implications, serious implications, for 02:35:08  
16 10 years, 20 years, 30 years down the pike.

17 And as an adult psychiatrist who deals with  
18 people, you know, from 96 down, I certainly see the  
19 impact of previous life decisions on their current  
20 suffering. 02:35:32

21 And so that's all it refers to, that -- and I  
22 do believe that if you spend your time in pediatrics,  
23 you probably don't have as -- as sharp a focus on the  
24 life perspective that an adult person -- adult -- a  
25 per- -- specializes in adults or who has a lot of 02:35:50

1 experience with adults have. That's all I'm trying to  
2 say.

3 Q Is it your view that Dr. Adkins' approach is  
4 to make the young person happy as opposed to creating a  
5 happy, high-functional, mentally healthy person for the 02:36:06  
6 next 50 to 70 years of life?

7 A I believe that Dr. Adkins has hope that she is  
8 going to create a happy, functional human being for the  
9 next 70 years of life, but I do believe she's  
10 influenced, primarily, on making her child -- her 02:36:20  
11 current patients happy.

12 The question is does Dr. Adkins have any  
13 evidence whatsoever that the decisions that she has  
14 been making with teenagers and younger children,  
15 does -- does she know that creates happiness in ten 02:36:38  
16 years or in five years. And certainly, I don't think  
17 she knows what happens in 30 years.

18 But I think as a society, you and I as  
19 representatives of society, can recog- -- recognize the  
20 relevance of the question. 02:36:56

21 We want to separate, at all times, physicians'  
22 beliefs from the evidence that supports those beliefs.

23 Q What's the basis for your notion that  
24 Dr. Adkins lacks an understanding of how to create a  
25 happy, highly functional, mentally healthy person for 02:37:15

Page 173

1 the next 50 to 70 years of life?

2 A Because she's a pediatric endocrinologist.  
3 Because she's a busy person dealing with young people.  
4 Because she doesn't follow-up her patients, I'm sure,  
5 for 30 years. 02:37:31

6 Q Do you follow-up your patients for 30 years?

7 A Some of them, yes. You know I published a  
8 paper about a 30-year follow-up of a trans person.  
9 Maybe you don't know. I published a paper about  
10 returning to the male gender role after 30 years. 02:37:48

11 Now, I can't say that I have, you know, 20  
12 patients I've followed for 30 years, but I -- I have  
13 certainly written about that case, and in -- in writing  
14 about that case, I have raised certain issues that are  
15 germane to your questioning right now. That is, a life 02:38:05  
16 perspective, a life course perspective is something  
17 that's reasonable and that an educa- -- a physician  
18 needs to be thinking about the long-term outcome of  
19 what is being done today.

20 Q What is the basis for you -- but you're -- 02:38:24  
21 sorry, I think you've already stated it, but I -- is  
22 there any other reason you have to believe that  
23 Dr. Adkins is not informing herself about the  
24 consequences of her actions on her patients 30 --  
25 30 years from today? 02:38:39

Page 174

1           A     Only that she could not know what happens.  
2     She hasn't been practicing 30 years, I don't believe.  
3     And I don't believe she is in a position, considering  
4     the work that she does, to have systematic follow-up,  
5     even for shorter periods of times, on her patients.           02:38:54

6                 If, for example, she has systematic follow-up  
7     on 80 percent of the patients she's ever given a  
8     hormone treatment for, that should be in the  
9     literature. And she knows, she should know, given  
10    the -- the -- what's absent from the literature, how       02:39:15  
11    welcome such a study would be, such a report would be.  
12    But as far as I know, she hasn't published that  
13    information.

14           Q     So your testimony is that you're basing your  
15    assumption that Dr. Adkins doesn't conduct systematic       02:39:28  
16    follow-up on her failure to publish a study showing her  
17    systematic follow-up?

18           A     I'm sorry, you'll have to repeat that. Too  
19    many similar phrases.

20                 MS. HARTNETT: Can the -- well, I'll try.       02:39:42  
21    BY MS. HARTNETT:

22           Q     Is the basis for your assumption that  
23    Dr. Adkins doesn't engage in systematic follow-up of  
24    her patients her failure to publish research indicating  
25    her systematic follow-up?                                       02:39:52

Page 175



1           A    No. I am sure Dr. Adkins follows her  
2   patients, but she's a pediatrician, basically, and  
3   usually, and I can't be certain about this, that at 18,  
4   pediatrics people turn the kids over to adult  
5   endocrinologists. 02:40:23

6                   And so I think just in the nature of being a  
7   pediatric endocrinologist, although she may see some  
8   kids into their 20s, I would imagine that the usual  
9   trend in pediatrics is to hand kids off, when they're  
10   18, to other practitioners; and, therefore, she 02:40:37  
11   probably has limited systematic follow-up after 18.

12                   And if you extend that by years, like five  
13   years and ten years and so forth, I would imagine that  
14   she may have a case or two that she follows or knows  
15   about, but it would not be anything like systematic. 02:40:55

16                   So the answer to your question is the basis --  
17   did she not publish, and that's the basis. I'm giving  
18   you an additional basis.

19           Q    Thank you. You mentioned one patient you had  
20   followed up over the course of 30 years, and I think 02:41:10  
21   said something like maybe 20 or -- how many patients,  
22   overall, do you feel like -- do -- do you believe that  
23   you followed up with over a period of decades in your  
24   practice?

25           A    Very -- very few. Because I exist in America, 02:41:26

1 and in America, we have no means of guaran- -- of -- of  
2 insisting on follow-up.

3 And on -- in -- another reason why is that  
4 when people transition, they -- they want to get rid of  
5 their professionals who dealt with them, and they don't 02:41:47  
6 naturally come back.

7 In fact, all attempts at follow-up, not just  
8 in my clinic, but elsewhere, we -- we reach -- we reach  
9 very few people.

10 For example, in a 2002 study of everyone who 02:42:02  
11 had sex reassignment surgery by one surgeon, only  
12 30 percent of the people who ever had surgery by this  
13 one surgeon actually were available for follow-up.

14 And all follow-up studies -- very few  
15 follow-up studies can have a hundred percent of the 02:42:22  
16 data of all the patients.

17 Follow-up is a problem. It's a much better  
18 problem -- it's solved much better in Scandinavia than  
19 it is in the United States. The United States have 50  
20 states. They have different rules. Nobody -- I don't 02:42:39  
21 think we -- we don't publish follow-up studies in the  
22 United States very often.

23 Q What do you do to try to follow up with your  
24 patients?

25 MR. TRYON: I think we have a connection 02:43:08

1 problem.

2 MS. HARTNETT: Is that me? It could be me.

3 THE VIDEOGRAPHER: We're just going to pause  
4 and see if he -- there he is. He's back.

5 MR. TRYON: There -- he came back. 02:43:15

6 BY MS. HARTNETT:

7 Q Sorry, I think you froze.

8 Did you hear my question?

9 MR. BROOKS: No, I think we don't -- we did  
10 not hear a pending question in this room. 02:43:32

11 Can you hear us now?

12 MS. HARTNETT: Okay. Sorry. The video froze  
13 from your end.

14 MR. BROOKS: We -- we see --

15 BY MS. HARTNETT: 02:43:40

16 Q My question was, what do you do to follow up  
17 with your patients?

18 A I ask them to follow up with me after their  
19 surgery, for example, or after their consultation with  
20 another person, another professional, and they actually 02:43:54  
21 rarely do.

22 Q Do you try to find them if they don't come  
23 back to you --

24 A Yes.

25 Q -- afterwards? 02:44:07

Page 178

1 A Yes.

2 Q How?

3 A I write them notes. I write them a letter.

4 Sometimes I write them a cute little postcard reminding

5 them of who I am. But they know what I mean. 02:44:15

6 Q If you have such limited follow-up with your

7 own patients, how do you know your method has -- what

8 the effect of your method is on people 30 years later?

9 A I don't know. And I -- I am like other people

10 in this field. I don't know the 30-year implication of 02:44:47

11 what we're doing. I don't know the 20-year implication

12 of what we're doing. I'm just raising the question,

13 shouldn't we be concerned about a life course

14 perspective.

15 I don't know and the people who are advocates 02:45:05

16 don't know, you see. I don't know how they can be so

17 sure that they're going to create a happy life.

18 Q So for all you know, your method could

19 actually be harming your patients more than the other

20 methods; is that fair? 02:45:24

21 A You mean in the long run I may be harming them

22 by talking with them, say, for six months about their

23 decision, what -- what they should go -- what -- what

24 they want to do?

25 I can't imagine that -- that my 02:45:48

Page 179

1 psychotherapeutic -- my relationship with them that is  
2 helping them to consider their thoughts, their feelings  
3 and their futures is -- is harming them and in 30 years  
4 they're going to have some terrible result of my  
5 intervention, you see. 02:46:07

6 What you're trying to contrast is talking to a  
7 person, say, for six months, every -- twice, three  
8 times a month for six months with socializing them in a  
9 new gender or supporting, giving them hormones and --  
10 and saying yes to genital surgery or mastectomy or 02:46:24  
11 sterilizing procedures, you see.

12 You're comparing Dr. Levine or  
13 psychotherapeutic talking, conversation, extended  
14 evaluation, with major biologically sterilizing,  
15 sexually dysfunction in causing interventions. 02:46:44

16 I really think -- we're not talking about  
17 apples and oranges here. I think we're talking about  
18 apples and zebras.

19 Q Your report discusses four competing models of  
20 therapy; correct? 02:47:13

21 A Correct.

22 Q So you have the apple, the zebra and two other  
23 things in that; correct?

24 MR. BROOKS: Objection.

25 THE WITNESS: No. 02:47:20

1 BY MS. HARTNETT:

2 Q The four competing models are watchful  
3 waiting, sub 1; sub 2, psychotherapy; and the  
4 affirmation model.

5 That's what you've set forth; correct? 02:47:30

6 A That's right.

7 Q And I'm asking you whether, for all you know,  
8 the psychotherapy model may be creating more harm for  
9 people than the affirmation theory model. You just  
10 don't know? 02:47:46

11 A I think I've already testified that it's hard  
12 for me to even conceptualize that I'm causing harm.  
13 Sometimes I'm causing frustration because "I want  
14 hormones now" and you're 14, and I'm sorry, we have --  
15 I want to talk about this. 02:48:14

16 But I don't really think that's harm in the  
17 way that when I look at the cross-sectional data on  
18 adults who have transitioned and -- and the  
19 comorbidities that they have, I consider those to be  
20 manifestations of harm, you see. 02:48:32

21 I don't really think that talking briefly  
22 and -- and honestly and examining things is -- is a  
23 source of harm.

24 It is --

25 Q But your -- your practice isn't to talk 02:48:46

Page 181

1 briefly to someone. You're talking -- right?

2 The -- the -- the model that you're setting  
3 forth is to talk with them at length and get to know  
4 them; correct?

5 A Yes, this used to be the model -- before 2011, 02:48:55  
6 this was the endorsed model by the World -- by WPATH,  
7 you see. I'm not talking -- I'm not inventing a new  
8 model here. This was the model we had in the '60s, the  
9 '70s, the '80s and the '90s and in the 2010s and --

10 Q And it's your view that the psychotherapy -- 02:49:14

11 A The view model changed.

12 Q It's your view that the psychotherapy model  
13 cannot, by its nature, harm anyone?

14 A I know some people think that it harms people.  
15 I don't believe that, actually. 02:49:28

16 Q Well, let me give you an example.

17 Say you're meeting with a patient and they  
18 want to talk you about their need or their perceived  
19 need for cross-sex hormones and you don't agree or  
20 choose not to support them with a letter. 02:49:45

21 Do you -- is that a fair -- just assume that,  
22 okay?

23 And that person then goes on to stop seeing  
24 you, has been taken off course from getting the  
25 cross-sex hormones, ends up becoming distraught at 02:49:55

Page 182

1       their condition and commits suicide.

2               Is that a situation where the psychotherapy  
3       model might be responsible for causing harm?

4               MR. BROOKS:  Objection; calls for speculation.

5               MR. TRYON:  Objection.  02:50:08

6               THE WITNESS:  If that -- such a patient goes  
7       to me -- comes to me and after -- in the first session  
8       wants a letter and I refuse to provide it, I will help  
9       that person -- if the person doesn't know, I will refer  
10      them to clinics -- to other resources.  02:50:26

11              The idea that my refusal would cause them to  
12      suicide is enormous and deep that leaves out so many  
13      intervening factors as to make me say I can't possibly  
14      agree with what you said.

15      BY MS. HARTNETT:  02:50:43

16              Q     But it's possible that your patients, for  
17      example, have higher rates of suicide than other  
18      patients that have gone through a different model;  
19      correct?  You just don't know?

20              MR. TRYON:  Objection.  02:50:52

21              THE WITNESS:  It's equally possible that the  
22      patients have a lower rate of suicide that have gone  
23      through Dr. Levine's care.

24      BY MS. HARTNETT:

25              Q     But it's also possible that they have had a  02:51:04

Page 183



1 higher rate of suicide going through Dr. Levine's care;  
2 correct?

3 MR. BROOKS: Objection --

4 MR. TRYON: Objection.

5 MR. BROOKS: -- calls for speculation. 02:51:13

6 BY MS. HARTNETT:

7 Q You said it's possible that they have a lower  
8 rate. It seems that the flip side of that is it's  
9 possible that they had a higher rate; is that correct?

10 A You're -- 02:51:23

11 MR. BROOKS: Same -- same objection.

12 THE WITNESS: You're asking me to speculate  
13 about something you know I don't have the answer to, so  
14 why should I give you an answer that I don't have? Why  
15 are you asking -- 02:51:32

16 BY MS. HARTNETT:

17 Q You testified that it's possible that --

18 MS. HARTNETT: I'm going to ask for an answer  
19 to my question without coaching, please.

20 BY MS. HARTNETT: 02:51:37

21 Q My -- I asked if it's possible that the  
22 patients of Dr. Levine have a higher rate of suicide  
23 than patients going through another method, and then  
24 you responded it's possible that they have a lower --  
25 lower rate. That's an answer. 02:51:49

Page 184

1 I'm asking you, is it possible that they also  
2 have a higher rate?

3 MR. BROOKS: And I have objected to the  
4 question as calling for speculation.

5 BY MS. HARTNETT: 02:52:01

6 Q Please answer.

7 A In order to -- in order to have an answer to a  
8 rate question, one has to have a denominator and  
9 numerator. I have neither a denominator or numerator;  
10 and, therefore, I can't really ask -- in any expert 02:52:23  
11 way, I cannot answer a question about the rate.

12 You're asking me theoretical possibilities,  
13 and there probably are at least three theoretical  
14 possibilities, and I could probably think of more,  
15 but -- 02:52:40

16 Q What are the three?

17 A There would be no difference in the rates,  
18 right? The rates could not be ascertained because the  
19 denominator -- the numerator and the denominator  
20 couldn't be determined. And then the fifth one would 02:52:52  
21 be because the numerator can't be determined.

22 So if you ask me a question about rate, it's a  
23 mathematical question. It's a scientific question.  
24 But you're not asking it in a scientific way at all.  
25 And I can't answer it. 02:53:07

Page 185

1           To the extent that I have any expertise, it's  
2     on the science. It's not on the speculation side of  
3     things.

4           Q     Your expert opinion is that the affirmative  
5     model is more harmful than the psychotherapy model;           02:53:18  
6     correct?

7           A     My -- my expert opinion is that the  
8     affirmative model does not have the scientific  
9     justification to declaim -- to -- to declare it to be  
10    the best practice. That's my expert opinion that --           02:53:35

11          Q     Does the psychotherapy model have any more  
12    justification than the affirmative model?

13          A     Only the tradition that if any other  
14    psychiatric problem presented in a 14- or 15-year-old,  
15    no one, no one would object to an extended evaluation,       02:53:53  
16    a psychotherapeutic exploration and the use of a  
17    medication to a drug -- to address some comorbidity.

18                It's just that when a -- when the child  
19    declares themselves trans, we want to create a whole  
20    different approach to this situation. That's my point.       02:54:12

21          Q     And just to make sure that we close the loop  
22    on the other point, because I'm not quite sure what the  
23    answer was there, is it your testimony that it's  
24    possible that your -- that Dr. Levine's patients could  
25    have lower rates of suicide than other methods?           02:54:29

Page 186

1 MR. BROOKS: Objection; calls for speculation.

2 THE WITNESS: I'm afraid -- although you don't  
3 understand my answer to the question, I feel like I've  
4 answered the question repeatedly already.

5 BY MS. HARTNETT: 02:54:46

6 Q Well, you've said that it could be -- I  
7 thought you -- I thought I understood you to say you  
8 could have lower rates, you could have a missing  
9 numerator or denominator or equivalent, but I didn't  
10 hear whether or not you think another possibility is in 02:54:54  
11 fact that the rates of suicide could be higher from  
12 your patients.

13 A Well, perhaps you missed the implication of  
14 what I said, that it could be higher, it could be  
15 lower, it could be the same, it could be indeterminant 02:55:06  
16 because of the denominator issues, and it could be  
17 indeterminant because of the numerator issues.

18 Q I appreciate that. Thank you.

19 We've talked about Dr. Adkins a bit here. I  
20 just wanted to ask you -- this is flashing back to -- I 02:55:22  
21 think we're in paragraph 13.

22 You then go on, in paragraph 16, to talk about  
23 Dr. Safer. Let me know when you're there.

24 A Got it.

25 Q Other than reviewing Dr. Safer's expert 02:55:43

Page 187

1 report, do you have any other familiarity with  
2 Dr. Safer's practices?

3 A I believe he's the head of a New York gender  
4 team, clinic.

5 Q Have you ever met him before? 02:55:58

6 A Not that I am aware of.

7 Q Have you ever been to his clinic?

8 A No.

9 Q Have you ever spoken to any of his patients?

10 A Not that I'm aware of. 02:56:11

11 Q How about Dr. Adkins, have you been to her  
12 clinic?

13 A No.

14 Q Have you spoken to any of her patients?

15 A Not that I'm aware of. 02:56:23

16 Q So do you know whether or not Dr. Safer's  
17 approach is focused on creating a happy, healthy --  
18 sorry -- happy, highly functional, mentally healthy  
19 person for the next 50 to 70 years?

20 A Ms. Hartnett, I think everyone in this field 02:56:42  
21 is hoping that what they're doing is creating that  
22 outcome. I would presume that Dr. Safer believes that  
23 and Dr. Adkins believes that. I just go back to the  
24 fact that we don't know the answer in what they're  
25 doing and what they're doing is a rather dramatic 02:57:04

Page 188

1 interventions in a person's biology, their physiology,  
2 their anatomy and their social roles, and it seems to  
3 me that if we're making such a very, very  
4 life-changing -- or cooperating with such a life  
5 change, a profound life change, that's going to effect 02:57:21  
6 every aspect of their lives, or most aspect of their  
7 lives, we ought to at least acknowledge that we don't  
8 have the follow-up data to match our belief systems.

9 And as I wrote about in the most recent  
10 publication, I do think that ethically we have a 02:57:40  
11 responsibility to inform people of what science knows  
12 and what we as professionals believe, but it's not  
13 supported by science.

14 So in answer -- to summarize my answer, I  
15 believe that your experts believe that they are 02:57:58  
16 creating a happy, healthy, functional life, even in the  
17 face of the fact that they -- cross-sectional studies  
18 of adults who are transgender and those who have had  
19 complete medical surgeries have significant problems.

20 And so what I have been saying, in summary, is 02:58:18  
21 that we -- we should separate our beliefs from what  
22 science knows.

23 Q You said "cross-sectional studies." You're  
24 just saying that those are lacking to -- to -- to -- to  
25 substantiate their approach. Is that what you're 02:58:37

1 saying?

2 A Please repeat that. You sort of -- I couldn't  
3 understand.

4 Q Sorry. You had -- yeah, fair -- fair enough.

5 I think you said something about 02:58:44  
6 cross-sectional studies being lacking to support their  
7 approach. Is that what you were saying?

8 A Yes. Not only cross-sectional studies failed  
9 to support the idea that everyone is living happily  
10 ever after or the majority are living happily ever 02:59:04  
11 after, the -- the Swedish study that was published in  
12 2011 that had outcome data on everyone who had sex  
13 reassignment surgery over a 30-year period. You may  
14 know that as the D-H-E-N-J-A (sic) study, et al. They  
15 demonstrated -- the -- the recommendation of that study 02:59:26  
16 is that everyone after sex reassignment surgery should  
17 have lifelong psychiatric care because the suicide rate  
18 was 19 times higher after this than the general  
19 population. The death rates were higher of cancer and  
20 of heart disease, the criminal rates were higher, and 02:59:45  
21 the admission rates to psychiatric hospitals were  
22 higher, after, then general population.

23 So that group in Sweden, in 2011, said, wow,  
24 these people are not necessarily doing so well as a  
25 group; that is, everyone that was -- everyone who had 03:00:01

Page 190

1 sex reassignment surgery was in that. So  
2 we wouldn't -- we wouldn't call that a cross-sectional  
3 study. We would have a life perspective study, you  
4 see. You are aware --

5 Q Was that -- was that comparing it to the 03:00:14  
6 general population, though? Not transgender people  
7 that had gone untreated, right?

8 A That study did not include people who were not  
9 treated with surgery, that's right.

10 Q Right. So to figure out if surgery makes a 03:00:26  
11 difference, wouldn't you study a population that had  
12 had surgery versus the population that had not had  
13 surgery, all of transgender people?

14 A Yes, I often wondered why the authors of that  
15 study did not study those people that they had records 03:00:39  
16 on who didn't have surgery. It's one of the missing  
17 issues about that. It doesn't take away from the fact  
18 that relative to non-transgender people of either sex,  
19 these people don't do nearly as well in life. But it  
20 doesn't answer the question that you're raising, and 03:00:59  
21 that's been amazing -- that's an amazing absence. One  
22 wonders why that is absent. I don't know why.

23 Q So just to be clear, the -- the thing that's  
24 absent is testing whether or not it's actually the  
25 medical interventions with the transgender people that 03:01:16



1 are accounting for the difference in suicide from  
2 the -- is that what you were saying?

3 MR. BROOKS: Objection; vague.

4 THE WITNESS: I'm saying that it would have  
5 been nice to have four control groups. And they only 03:01:35  
6 had three control groups. And I don't --

7 BY MS. HARTNETT:

8 Q Right.

9 A I don't understand why there wasn't the fourth  
10 control group that you are raising because it does -- 03:01:43  
11 you know, I already testified that nothing is certain,  
12 but this would have increased our conviction about  
13 whether or not people are dying of cancer and heart  
14 disease and HIV and suicide and so forth at a higher  
15 rate compared to those who are transgender but who 03:02:08  
16 weren't getting the surgery.

17 So I don't know the answer.

18 Q Could I go to -- paragraph 18 has several  
19 subparagraphs. I just have a couple of questions on  
20 this. The first is on paragraph 18A. 03:02:28

21 I just had a -- it was a minor reference, but  
22 I'm just curious about your own use of terminology.  
23 You had, here in the second sentence of 18A (as read):

24 "While hormonal and surgical  
25 procedures may enable some individuals 03:02:45

Page 192

1 to 'pass' as the opposite gender  
2 during some or all of their lives..."

3 And the sentence continues.

4 In the declaration you had -- that had been  
5 filed, your declaration that was filed at the PI stage, 03:02:55  
6 the words "female identifying male" were used instead  
7 of "some individuals."

8 Is -- is there a reason why that would have  
9 been changed?

10 A In the original -- what was in the original 03:03:15  
11 draft that you looked at?

12 Q It said "a female identifying male" as opposed  
13 to "some individuals."

14 MR. BROOKS: I'll object to the question as  
15 characterizing that as original. 03:03:24

16 BY MS. HARTNETT:

17 Q Well, it was the declaration -- I compared the  
18 declaration that was apparently submitted without your  
19 knowledge on your -- in -- in the PI stage of this case  
20 with the report, thinking that you had done both of 03:03:36  
21 them, and I'm -- what I'm just observing was that the  
22 words "female identifying male" had been used in this  
23 paragraph and then now has been replaced by "some  
24 individuals," and I'm just curious as to why that  
25 change was made, if you know. 03:03:47

Page 193

1           A    I don't know. I don't remember that phrase.  
2           That seems like -- that seems like a rather awkward  
3           phrase, you know, that you quoted.

4           Q    Yeah, why -- is that a phrase you use --  
5           "female identifying male," is that a phrase that you       03:04:00  
6           use?

7           A    I -- I may have at one time or another used  
8           that phrase.

9                   Obviously, for everyone concerned, the  
10           language -- the vocabulary -- the -- the -- the       03:04:12  
11           socially acceptable vocabulary in this field changes so  
12           often.

13                   So, you know, as I told you, I spent probably  
14           25 hours developing this, and there are numerous  
15           changes here and there which I could not possibly       03:04:33  
16           recall.

17                   And I can't answer your question. I really  
18           don't know the answer.

19           Q    Okay. Well, I'll ask one more in that vein,  
20           and then we'll move on.                               03:04:42

21                   For paragraph 18L, which is at the top of  
22           page 8 -- and this a paragraph where you're  
23           describing -- you say that (as read):

24                   "Hormonal interventions to treat  
25           gender dysphoria are experimental in               03:05:01

Page 194

1 nature and have not been shown to be  
2 safe, but rather put an individual at  
3 risk of a wide range of long-term and  
4 even life-long harms..."

5 And then you go on to list all that. 03:05:10

6 A Yes.

7 Q The prior version of this -- in the same place  
8 had -- had language that said -- I'm going to just read  
9 it to you. (As read):

10 "Putting a child or adolescent on a 03:05:21  
11 pathway towards life as a transgender  
12 person."

13 And that has been removed. I'm just curious  
14 as to why that was removed.

15 MR. BROOKS: Late objection. 03:05:28

16 THE WITNESS: I actually -- I can't give you a  
17 specific answer to the question. I have no memory  
18 of -- of -- of making that editorial change.

19 I -- I -- I am sensitive to and actually have  
20 a preference to not using the same phrase endlessly in 03:06:01  
21 any document. And one of my concerns about previous  
22 documents has been the redundancy of phrases, and so  
23 I -- I try not to repeat certain powerful phrases.

24 I -- I think they actually have more impact on the  
25 reader if they read them once or twice and not 15 03:06:26

Page 195

1 times. So that may have been an example of that.

2 As a writer, I'm very sensitive to redundancy,  
3 and I prefer to have things done short -- in shorter  
4 versions than in longer versions, but that is not  
5 always in keeping with legal requirements. 03:06:46

6 Q Turning to paragraph 19, this is -- I'm not  
7 going to -- there's a couple of questions I had  
8 about -- or, sorry, not -- 20. You're talking about  
9 biological sex.

10 Do you see that? 03:07:01

11 A Yes.

12 MR. BROOKS: Sorry, you want 19 or 20?

13 MS. HARTNETT: I'll move to 20.

14 BY MS. HARTNETT:

15 Q You say that (as read): 03:07:08

16 "Sex is not 'assigned at birth' by  
17 humans visualizing the genitals of a  
18 newborn; it is not imprecise.

19 Do you see that?

20 A Yes. 03:07:17

21 Q Do you have any experience with the process of  
22 assigning sex to newborns at birth?

23 MR. BROOKS: Objection.

24 THE WITNESS: You know, I -- probably for a  
25 week in my medical school pediatrics rotation I was

03:07:32

Page 196

1 part of the newborn nursery and delivery -- and in  
2 obstetrics. The newborn delivery room phenomenon of  
3 saying, Mother, your -- you have a daughter. Or,  
4 Mother, you have a son. So I guess that's part of my  
5 experience. I'm a parent, so I've had that experience. 03:07:52  
6 What I -- period. I think that's an answer.

7 BY MS. HARTNETT:

8 Q Thank you. You also say in this paragraph,  
9 among other things, that sex is determined at  
10 conception; correct? 03:08:06

11 A Yes, when -- yes, I do -- that's when sex is  
12 determined, yes.

13 Q You say that at the end of the first  
14 sentence of -- sorry -- the second sentence of  
15 paragraph 20. And the source that you cite in this 03:08:22  
16 paragraph for everything in this paragraph is a  
17 document that says "NIH 2022."

18 Do you see that?

19 That's at the top of page 9.

20 A Yes. 03:08:34

21 Q What is NIH 2022?

22 A I think the first author's name is Aditi  
23 B-H-R-A-R- -- Bhar- -- Bhargara or something like that,  
24 but it has probably 15 authors, the paper.

25 Q So that's a paper that you were citing? 03:08:55

Page 197

1 A Yes.

2 Q Okay. Let me move down to section D. So that  
3 starts on page 14 of your report.

4 MR. BROOKS: We have it.

5 BY MS. HARTNETT: 03:09:26

6 Q And you -- this is your section about "Three  
7 competing conceptual models of gender dysphoria and  
8 transgender identity."

9 Do you see that?

10 A Yes. 03:09:35

11 Q Is this your construct, these three models?

12 A Yes.

13 Q Paragraph 37, you describe the developmental  
14 paradigm, I guess; is that fair?

15 A Yes. 03:09:50

16 Q I was comparing the declaration submitted at  
17 the earlier stage of the case with the report here, and  
18 I noticed that some language was deleted, and I will  
19 double-check to represent to you that it is not still  
20 here. 03:10:09

21 But the language that was deleted from  
22 paragraph 37 is as follows (as read):

23 The developmental paradigm does not  
24 preclude a biological temperamental  
25 contribution to some patients' 03:10:22

Page 198

1           life (sic); it merely objects to  
2           assuming these problems are biological  
3           in origin. All sexual behaviors and  
4           experiences involve the brain and the  
5           body." 03:10:31

6           Is there some reason that you removed this  
7    language from this report?

8           A   Well, I think I said it in a different way. I  
9    said (as read):

10           "The developmental paradigm is mindful 03:10:42  
11           of temperamental, parental bonding,  
12           psychological, sexual, and physical  
13           trauma influence (sic), and the fact  
14           that young children work out their  
15           psychological issues through fantasy 03:10:53  
16           and play and adolescents work out  
17           their issues by adapting various  
18           interests and identity labels."

19           This is -- this is the material that I  
20    prepared as the expert witness report for this 03:11:07  
21    particular case.

22           Over time, you see, I have a different -- I --  
23    I say things more efficiently, I believe.

24           I could elaborate that, but I don't think it's  
25    relevant. 03:11:27



1 Q No. Thank you. I appreciate it.

2 But you agree, sitting here today, that all  
3 sexual behaviors and experiences involve the brain and  
4 the body?

5 A I agree that all behaviors involve -- well, 03:11:38  
6 the brain and the body is really one thing, you know.  
7 They're just part of the biology of a -- of the  
8 human -- of human beings, and that -- those biology --  
9 multiple biologic factors interact with other  
10 psychosocial factors throughout life to shape our 03:12:03  
11 feelings and our behaviors and so forth.

12 Q In paragraph 38, you refer to a Littman 2018  
13 study.

14 Do you see that?

15 A Paragraph 38, yeah. 03:12:17  
16 Yeah.

17 Q Are you aware that that article was -- had to  
18 be withdrawn and corrected and republished?

19 MR. BROOKS: Objection.

20 THE WITNESS: I am aware that there was a lot 03:12:32  
21 of political brouhaha about that and that various trans  
22 advocates accused that author of bad things or whatever  
23 but that the restatement of the study really did not --  
24 did not amount to a great change.

25 But -- but, in fact, there was a brouhaha by 03:13:01

Page 200

1 the publication objecting to her methods so to speak,  
2 but really were -- they were objecting to her  
3 conclusions.

4 BY MS. HARTNETT:

5 Q Was her method an anonymous survey of parents? 03:13:16

6 A Her -- it was a survey of parents, right.

7 Q Do you know if they were anonymous or not?

8 A At this moment, I don't know.

9 Q You go on in section E here, starting on  
10 page 16, to talk about four competing models of care. 03:13:32

11 MR. BROOKS: Sorry.

12 BY MS. HARTNETT:

13 Q I also was wondering --

14 MS. HARTNETT: Oh, sorry.

15 MR. BROOKS: I hit the wrong thing, and the 03:13:38  
16 document disappeared off the screen. Let me -- I'm not  
17 sure what's going on here.

18 Okay. Sorry, I -- it accidentally closed as I  
19 tried to get rid of some pop-up on the screen, and we  
20 will get us back. 03:14:04

21 And, I'm sorry, what paragraph were you at?

22 MS. HARTNETT: It's section header E, page 16.

23 MR. BROOKS: Page 16.

24 BY MS. HARTNETT:

25 Q I'm just asking whether the four competing 03:14:25

Page 201

1 models of care is your schema.

2 A I think it borrows from other things in the  
3 literature. I wouldn't want to claim, you know,  
4 authorship for that per se. It's really hard for me to  
5 know where all my ideas come from because I read so 03:14:54  
6 much and go to meetings and so forth, and I hear  
7 things, and it influences me.

8 I -- I -- it's my summary of -- when we think  
9 about what are the options that we can offer to people,  
10 this is all I think of. Maybe tomorrow -- 03:15:11

11 Q Okay.

12 A -- I'll think of a fifth option.

13 Q Can you go down to paragraph 53?

14 And this is after you walk through the  
15 watchful waiting model, A and B, a psychotherapy model 03:15:25  
16 and then the affirmation model and then coming to  
17 paragraph 53.

18 MR. BROOKS: Let me just find the heading  
19 above it.

20 So we're under the affirmation therapy model 03:15:38  
21 number 4, if I'm scanning the --

22 MS. HARTNETT: Yeah.

23 MR. BROOKS: Okay.

24 MS. HARTNETT: That's correct.

25 And then paragraph 53. 03:15:46

Page 202

1 MR. BROOKS: Okay.

2 BY MS. HARTNETT:

3 Q Out of these four models, you do not know what  
4 proportion of practitioners are using which model; is  
5 that correct? 03:15:57

6 A Yes.

7 Q Okay. Oh, sorry, I had one question about 49,  
8 which was within the psychotherapy model area, if you  
9 could flip up to there.

10 MR. BROOKS: Yes, let me just find the heading 03:16:11  
11 again so we understand how much material --the  
12 psychotherapy model begins at the top of page 18, and  
13 you now want to direct us to paragraph 49? Was that  
14 the paragraph you mentioned?

15 MS. HARTNETT: Correct. 03:16:29

16 MR. BROOKS: All right.

17 BY MS. HARTNETT:

18 Q And is the psychotherapy model the model you  
19 follow, Dr. Levine?

20 A It's the model that I approach new patients 03:16:43  
21 with, and depending on the situation of the patient in  
22 the family's life, I then go from there. So individual  
23 patients, I may counsel the support of the -- I may  
24 counsel parents to support the transgender  
25 identifications of their child. 03:17:09

Page 203

1 But it begins with trying to figure out what's  
2 going on here and going on here with the child and the  
3 child's history and the parents and their history and  
4 the interactions between the -- the parents and the  
5 child. 03:17:25

6 So it's not my model for all therapy. As I've  
7 said, I think earlier, that I have supported trans care  
8 for individuals, affirmative care for individuals. But  
9 if you ask me how I begin, I don't not -- I do not  
10 begin with the affirmative model. I begin with let's 03:17:44  
11 investigate this situation thoroughly so we can  
12 eventually make a prudent decision.

13 Q You say in paragraph 49 (as read):  
14 "To my knowledge, there is no evidence  
15 beyond anecdotal reports that 03:18:01  
16 psychotherapy can enable a return to  
17 male identification for genetically  
18 male boys, adolescents, and men, or  
19 return to female identification for  
20 genetically female girls, adolescents, 03:18:13  
21 and women."

22 Do you see that?

23 A I do.

24 Q And you stand by that statement?

25 A Yes. 03:18:24

1 Q Paragraph 50, this is at the beginning of the  
2 affirmative therapy model, on the next page. I think  
3 we've already covered this, so we don't need to belabor  
4 it, but here, you -- among other things, you say that,  
5 under the affirmation therapy model, practitioners -- 03:18:44  
6 and I'm going to read from the first sentence. And I'm  
7 not reading the whole sentence, but you can obviously  
8 read whatever you want. I'm reading from the middle of  
9 it. (As read):

10 "...promote and recommend that any 03:18:58  
11 expression of transgender identity  
12 should be immediately accepted as  
13 decisive..."

14 I'm just going to stick on that part, the  
15 "immediately accepted as decisive." 03:19:08

16 What is your basis for believing that the  
17 affirmation model proceeds with an immediate acceptance  
18 as decisive?

19 A Because --

20 MR. TRYON: Objection. 03:19:19

21 Go ahead.

22 MR. BROOKS: Mr. Tryon is objecting.

23 You have to give him time.

24 THE WITNESS: In a previous -- in a -- in a  
25 previous portion of this informed consent, I said that 03:19:29

Page 205

1 it is my impression that many people in the affirmative  
2 model have a number of beliefs that I don't think are  
3 scientifically accepted or acceptable or correct and  
4 including the fact that this is biologically dictated,  
5 that anytime a person, any stage in life, declares a 03:19:52  
6 transgender identity, it's because prenatally that was  
7 determined and it merely unfolded at a different rate  
8 at different times.

9 So the -- the justification for immediate  
10 affirmation is based upon this idea, one, that it's 03:20:13  
11 biologically dictated; and, two, that it's  
12 unchangeable.

13 BY MS. HARTNETT:

14 Q Yeah, I'm sorry, I think -- just given that  
15 we're -- have only so much time and I -- I think my 03:20:25  
16 question, though, was what was your basis for  
17 understanding that the practitioners engage in this  
18 practice.

19 MR. BROOKS: Objection; vague as to "this  
20 practice. 03:20:36

21 BY MS. HARTNETT:

22 Q Well, the practice of immediate acceptance as  
23 decisive.

24 A I think I've already testified how many  
25 parents have told me these things and how many patients 03:20:43

Page 206

1 have told me these things and -- and -- well, I won't  
2 repeat what I began to tell you about.

3 Q No. Thank you. That -- that just helps me  
4 connect that that -- that basis of evidence is the same  
5 that's at issue here. 03:20:59

6 Paragraph 56, I had a question there.

7 MR. BROOKS: And, Counsel, we should take an  
8 hourly break soon.

9 MS. HARTNETT: Now is fine.

10 MR. BROOKS: All right. Now is it -- now it 03:21:14  
11 is.

12 THE VIDEOGRAPHER: We are off the --

13 MS. HARTNETT: Come back at --

14 THE VIDEOGRAPHER: Off the record at 3:21 p.m.

15 (Recess.) 03:35:28

16 THE VIDEOGRAPHER: We are on the record at  
17 3:36 p.m.

18 MR. BROOKS: And -- and --

19 MS. HARTNETT: Thank you.

20 MR. BROOKS: -- Josh, if you would turn off 03:35:34  
21 your camera, you will -- will be able to see the  
22 questioner better.

23 There we go. Thank you.

24 MS. HARTNETT: Okay. Great.

25 ///



1 BY MS. HARTNETT:

2 Q Before the break, we were talking, at least a  
3 bit, about the four models that you had in the  
4 psychotherapy model, and I was asking you if you follow  
5 that, and we were having a discussion. And I want to 03:35:54  
6 make sure I don't misconstrue your approach.

7 Is it fair to say that you kind of follow the  
8 psychotherapy model, but also not to the exclusion of  
9 providing medical care or recommending medical care, if  
10 it's appropriate, after some course of psychotherapy? 03:36:07

11 A Yes, I -- to summarize, the initial approach  
12 to a patient, I believe my model, what I endorse, is an  
13 extended evaluation, an opportunity to talk over time  
14 in what I call psychotherapy. Other people may call it  
15 extended evaluation. And then depending on what I 03:36:34  
16 understand about the patient and his or her life and  
17 their aspirations and their capacities to understand  
18 the present and the future and the past, then I may in  
19 fact say, you know, Fine. You know, do what you -- do  
20 what you -- use your best judgment. And I will write a 03:36:55  
21 letter for you, you know, telling your -- the surgeon  
22 or telling the endocrinologist about you.

23 And I do that.

24 Q And was that general approach extended to  
25 minors as well? 03:37:17

1           A    Well, if -- if minors are children, I actually  
2   have never recommended socialization of a child in  
3   that -- that is, in a new gender. I have seen -- I  
4   have never recommended that.

5                   When it comes to teenagers, the closer they           03:37:36  
6   get to 18, the more I'm willing to talk to them about  
7   the possibility of hormones and being supportive of it  
8   after a certain period of time.

9                   When it comes to older people, it's -- it's  
10   not as broad a question.   03:37:57

11           Q    And how long is your -- when you discuss an  
12   extended evaluation, how -- how long is that?

13           A    It doesn't have a definable length.

14           Q    Is there -- and I'm just trying to really  
15   understand. Is it a matter of hours, days or longer?           03:38:13

16           A    It's certainly -- a -- a psychotherapeutic  
17   hour is typically one; right? But when people come to  
18   Cleveland for an evaluation, I often spend two days.  
19   And so I may spend, you know, four hours over two days  
20   or maybe even more with a patient and then separately       03:38:37  
21   with their parents and sometimes together with their  
22   parents.

23                   But when I'm talking about an extended  
24   evaluation, I mean that in two terms. One is for  
25   people who want to come for an intense evaluation that       03:38:53

1 at the end of two days will give some -- give some  
2 feedback to them and -- but the usual sense for people  
3 who live in Cleveland, where I reside, that is over  
4 weeks and months of talking over time, considering  
5 various -- the things I've already articulated. 03:39:14

6 Q Have there been situations where after the  
7 sort of intense extended evaluation, the two days  
8 and -- four hours over two days period, where you've  
9 supported or recommended any medical treatment after  
10 that period? 03:39:33

11 A Well, about -- about a year ago, a -- a --  
12 a -- a college student who wasn't doing very well, who  
13 got actually hormones on a one-hour visit, to the  
14 student health service, the -- we recommended that the  
15 patient could decide whether to continue hormones or 03:39:53  
16 not. The parents did not want the person to continue  
17 hormones, and the patient continued hormones. And we  
18 just made a recommendation. We thought there was an  
19 advantage to stopping and reconsidering life, but it  
20 was the patient's choice, you see. It wasn't the 03:40:12  
21 parents' choice. It wasn't my choice, you see. But  
22 it's the respect for the patient's autonomy.

23 Q Did you write a letter there or some sort of  
24 authorization for him to get the hormones?

25 A No. He already had the hormones. As I said, 03:40:29

1 he got the hormones after one hour with a person who  
2 knew nothing about his background, really, that -- what  
3 I would say, relatively nothing.

4 Q Where was that treatment?

5 A That was at the University of Rochester. 03:40:40

6 Q Okay. So -- and then my question is just for  
7 kind of -- I guess, what's the shortest period of  
8 extended evaluation that you've performed after which  
9 you've written a letter for someone to get transgender  
10 medical care? 03:41:00

11 A I'm going to elaborate your question into me  
12 or my staff because in some --

13 Q Thank you.

14 A It's a whole -- it's a committee of work, a  
15 group of people. 03:41:13

16 I would say four hours.

17 Q Thank you. You had mentioned your -- the  
18 recently published article about the -- the  
19 reconsidering informed consent piece; correct?

20 A Yes. 03:41:32

21 Q And in there, you note that -- kind of --  
22 you're talking about the affirmation -- what you  
23 characterize as the affirmation approach; right?

24 A Correct. There's a section on that, yeah.

25 Q And then you note that the "research about 03:41:46

Page 211

1 alternative approaches, such as psychotherapy or  
2 watchful waiting, shares the scientific limitations of  
3 the research of more invasive interventions; there are  
4 no control groups, nor is there systematic follow-up at  
5 predetermined intervals with predetermined means of 03:42:03  
6 measurement."

7 Does that --

8 A Yes.

9 Q Is that something you have in the article?

10 A I think I made the same point in -- in this 03:42:10  
11 document that I gave to you.

12 Q Right. I was just trying to connect the two.

13 So that's basically the same point you've been  
14 making, that -- the kind of lack of evidence, from your  
15 perspective, as to which approach is kind of 03:42:26  
16 scientifically based; is that right?

17 A Yes.

18 Q Okay. If we could flip forward, I -- sorry,  
19 going backward for a minute and then we'll go forward  
20 again, in your declaration, but I had a question about 03:42:36  
21 paragraph 18, little L. Sorry, that's not right. It  
22 is 18, little -- sorry, one second.

23 I'll try again.

24 Can I direct your attention to paragraph 18H,  
25 on page 7? 03:43:03

Page 212

1 MR. BROOKS: And let me just first start on  
2 the top of 18 so we know what the major proposition  
3 here -- a summary of key points. All right.

4 And, I'm sorry, you said H?

5 MS. HARTNETT: Correct. 03:43:18

6 BY MS. HARTNETT:

7 Q So I'm going to direct your attention to  
8 paragraph H, on page 7, which you talk about  
9 administration of puberty blockers not being a benign,  
10 quote, pause of puberty. 03:43:31

11 Do you see that?

12 A I do.

13 Q And this, I noticed, was something newly added  
14 to this declarations from the one that you had  
15 submitted at the preliminary injunction stage. 03:43:42

16 My question for you is what the basis is for  
17 your qualification, in your perspective, to talk about  
18 the effects of puberty blockers.

19 MR. BROOKS: Object to the form of the  
20 question. 03:43:57

21 THE WITNESS: What is the basis of my  
22 objection to the use of puberty blockers?

23 BY MS. HARTNETT:

24 Q Sorry, the basis for your understanding of  
25 whether -- how they function on the body and whether 03:44:04

Page 213

1 they're a benign pause of puberty or not.

2 A The initial justification for puberty blockers  
3 being a benign thing is that it merely was a pause and  
4 that if it was fully reversible, puberty would -- would  
5 return when puberty blockers were removed, if they were 03:44:32  
6 chosen to be removed.

7 I often reacted to that word "pause" because I  
8 was aware that I was unaware of the rich biological  
9 details that puberty changes every organ in the body.  
10 Puberty not only causes growth of bones, but puberty 03:44:53  
11 causes growth of the liver, of the lungs, of the heart,  
12 of the brain. You name the organ, and the pubertal  
13 changes are occurring, and they occur in a sequence.  
14 And one of the developmental aspects of development is  
15 that there are windows of opportunity for development, 03:45:15  
16 and when the window closes, we're not sure whether  
17 things can be totally reversed.

18 And I noticed that there was a benign  
19 connotation to the word "pause" which did not strike me  
20 as true or possibly true or certifiably true. 03:45:35

21 And so I began looking at various statements  
22 from various authors about saying this.

23 And in the early years, people talked about  
24 complete reversibility and it's only a pause, but I  
25 realized, in reading their subsequent sentences, that 03:45:56

Page 214

1 they didn't consider -- they were talking about bone.  
2 They were talking about the onset of puberty. They  
3 weren't talking about the subtle changes of -- of, say,  
4 for two or three years of interfering with the  
5 processes that were naturally happening in your and my 03:46:11  
6 children and the children of society.

7 So -- and then I looked closer at it, and I  
8 said, what about the impact, the psychological, social,  
9 sexual impact of having one's peers have these major  
10 changes in every aspect of their body while the person 03:46:31  
11 was paused in a puerile state, has anyone considered  
12 that when they said it's completely reversible.

13 Nowadays, I think people are not certain it's  
14 completely reversible, and they're beginning to  
15 articulate the possibility that I just articulated. 03:46:53

16 They're beginning to say we don't know what  
17 the psychosocial impact of being puerile while your  
18 peers are pubertal.

19 And while your peers are pubertal, you're  
20 getting -- you're starting to deal with your sexual 03:47:10  
21 feelings and your sexual conflicts, and you're getting  
22 to operationalize your -- what the early orientation  
23 aspects of early puberty are, you see. And the puerile  
24 child is not.

25 And so I thought the word pause was a kind of 03:47:23



1 rhetoric that -- that justified doing something that  
2 was much more complicated and had not been articulated  
3 well by the people who began using it.

4 I'm not sure that today's people are talking  
5 in the same way that they did when -- 20 -- ten years 03:47:41  
6 ago.

7 Q When did you come to --

8 A I think they're more sophisticated today.

9 Q When did you come to this understanding or  
10 view about the -- your kind of concern with using the 03:47:53  
11 term "pause"?

12 A I think it's been evolving in my mind over the  
13 last two or three years.

14 Q Do you know whether the pubertal response  
15 would be the same -- basically, if the puberty blockers 03:48:06  
16 were used and then a child were to go off the puberty  
17 blockers, do you know whether it would be the same  
18 pubertal response that would have been had without the  
19 blockers?

20 A Well, I think endocrinologists have said that 03:48:21  
21 it's same, but I don't know if they have even the -- I  
22 don't know that -- I don't know that I trust that  
23 they're right about that. I don't know that they're  
24 wrong. I just don't know that they're right. Because  
25 in concepts of development -- for example, if you 03:48:43

Page 216

1 don't -- if you don't hear at a certain stage in life,  
2 say the first two years of life, and even if we do a  
3 cochlear implant, and we put -- we -- you can hear  
4 starting at age three or age four or age five, you  
5 can't speak as clearly as you and I can speak. 03:49:01

6 So, you see, there's a window of opportunity  
7 when the brain is changing and we -- it's -- that --  
8 that other -- other aspects of life develop. And I  
9 think this is probably true throughout life as a  
10 principle. 03:49:18

11 So the idea that, oh, we can give a kid for  
12 three years or four years and keep them paused while  
13 they decide what they want to do, whether they want to  
14 go cross-sex hormones or not, and then if they decide  
15 not to go the cross-sex hormone route, that they will 03:49:33  
16 just go into puberty and everything be normal, I just  
17 think that's a naive idea. But I was proposing that,  
18 you see. I can't prove it and either can -- either can  
19 the endocrinologist prove it. That's my point.

20 Q Thank you. 03:49:47

21 MS. HARTNETT: I've put in the "Marked  
22 Exhibits" folder Exhibit 88. If you -- your counsel  
23 could look at that.

24 Let me know if you see that.

25 (Exhibit 88 was marked for identification 03:50:05

1 by the court reporter and is attached hereto.)

2 MR. BROOKS: I do see it now.

3 BY MS. HARTNETT:

4 Q This is -- Dr. Levine, do you see -- this is  
5 testimony that you gave to the Pennsylvania legislature 03:50:11  
6 in March of 2020.

7 A Okay.

8 Q Do you recall giving this testimony?

9 A I recall testifying, yes.

10 Q Okay. I'm -- I have a question that -- you 03:50:19  
11 had your kind of prepared remarks, and then you got  
12 some questions from the legislators, and what I would  
13 like to do is ask you about something on page 61, which  
14 was your response to a question about puberty blockers,  
15 if you could page forward to 61. 03:50:33

16 MR. BROOKS: Will you direct us to the  
17 question?

18 Let me see here. I -- I --

19 MS. HARTNETT: Okay. If -- yeah. It's a  
20 question from Representative Zimmerman, and it's asking 03:50:47  
21 about the reversibility of puberty blockers, on  
22 page 61.

23 MR. BROOKS: Oh, the question on 61 is  
24 fragmentary; right?

25 "If puberty blockers are started," is that the 03:51:06

Page 218

1 question you're referring to?

2 MS. HARTNETT: You can feel free to look  
3 above, but I'd like to ask about the passage on 61.

4 He asked a two-part question, and he had then  
5 asked to be reminded about the second part of the 03:51:21  
6 question.

7 And Representative Zimmerman said, "Yes. If  
8 puberty blockers are started."

9 And then Dr. Levine said, "Oh, reversible,  
10 yes, sorry." 03:51:30

11 And what I'd like to ask him is to read this  
12 passage -- hear his testimony and just whether he  
13 continues to believe what he's testified to.

14 THE WITNESS: I've read the paragraph.

15 MR. BROOKS: The -- 03:52:06

16 BY MS. HARTNETT:

17 Q I guess, just --

18 MR. BROOKS: Just continue --

19 THE WITNESS: Oh, you want me to continue?

20 MR. BROOKS: I want you to read to the end of 03:52:11  
21 that answer.

22 MS. HARTNETT: Correct. Thank you.

23 THE WITNESS: Okay.

24 BY MS. HARTNETT:

25 Q Do you stand by the testimony that you gave in 03:52:32

Page 219

1 these two paragraphs?

2 A I don't see a -- a major difference between  
3 what I just said to you except -- than what I said  
4 here. Here, I was talking about one year. And -- and  
5 it depends on -- you know, if you give a puber- -- an 03:52:51  
6 eight-year-old child a puberty blocker versus a  
7 nine-year-old child versus a 14-year-old child. I  
8 think we're talking about different phenomenon, you  
9 see. The -- not only biologic phenomenon, but  
10 psychosocial phenomenon. Because if you give it to an 03:53:09  
11 eight-year-old, their peers are still puerile, you see.  
12 And -- and when -- if you give it to 14-year-old or a  
13 12-year-old, their peers are rapidly growing and  
14 changing and being involved in all kinds of  
15 psychosocial and -- processes that -- that a 03:53:23  
16 nine-year-old is not, the eight-year-old is not.

17 So I think today's testimony elaborates upon  
18 what I was saying in a less sophisticated way to  
19 Mr. Zimmerman.

20 Q Thank you. You talk about desistance at 03:53:37  
21 length in your report; correct?

22 A I hope so, yes.

23 MR. BROOKS: Counsel, do you want me to take  
24 down 88 or leave it up?

25 MS. HARTNETT: You can take down 88. 03:53:50

Page 220

1 BY MS. HARTNETT:

2 Q Do you believe that desistance should be the  
3 goal of treating patients with gender dysphoria?

4 A I think I previously stated that the goal of  
5 treating gender dysphoria is to have an informed 03:54:05  
6 consent process in a brain -- for a person whose brain  
7 is old enough to consider the possibilities about the  
8 risks, and the goal of -- of their gender expression  
9 has to rely primarily on them and their process of  
10 coming to grips with what it needs, not just in 03:54:24  
11 fantasy, but in reality, for them to portray themselves  
12 as a trans person.

13 So I don't -- your question has previously  
14 been answered by me. Parents would very much like me  
15 to be able to return their child efficiently and 03:54:44  
16 quickly to a tran- -- to a cis state, but I can't  
17 promise that as a goal. I can't even hold that out as  
18 a goal. What I hold out is what I just said to you.

19 Q If you could -- you -- so you don't believe  
20 it's possible to talk somebody out of being 03:55:08  
21 transgender; is that fair?

22 MR. BROOKS: Objection.

23 THE WITNESS: It's not the language that I  
24 would ever use. I don't talk people out of things. I  
25 don't talk people out of getting married to a person. 03:55:22

Page 221

1 I don't talk people out of going to this college versus  
2 that college.

3 I -- I -- I sort of elicit their feelings. I  
4 help them see where there is conflict. I help them  
5 articulate the pluses and minuses, as we can predict 03:55:38  
6 the future. I look at trends.

7 I don't talk people out. It's not what a --  
8 what Dr. Levine, the psychiatrist, does, talk people  
9 out of X, Y or Z. And Z may be transgender identity.

10 Q If you could treat everyone to have them cease 03:55:58  
11 being transgender who -- sorry.

12 For the transgender patients you have, if you  
13 were able to treat them such that they would no longer  
14 be transgender, would that be your preferred outcome?

15 MR. TRYON: Objection. 03:56:19

16 THE WITNESS: It depends what cost it would  
17 have to be -- to return to living as a cisgender  
18 person. It would not be my goal if it would cost them  
19 their sanity, for example, if it would cost them  
20 continued anguish. My goal is -- is stated to -- I've 03:56:38  
21 already stated my goal.

22 The -- there is a belief that life is hard  
23 enough as a cisgender person, you see. But these  
24 things -- you see, I -- I -- I'm interested in what it  
25 is about being a cisgender person that is so hard for 03:57:08

Page 222

1     you, you see. Why is it that this is so difficult for  
2     you. What is it about femaleness or maleness or  
3     your -- your -- your sex, your original sex, you know,  
4     your sex, what it is about it that is so offensive and  
5     offending to you. Why is there such incompatibility. 03:57:30  
6     Tell me. Teach me.

7           Q     But using the language from your -- at least  
8     your declaration earlier in the case where you had  
9     described, you know, the -- the risks and harms that  
10    would come from, quote, putting a child or adolescent 03:57:44  
11    on the pathway towards life as a transgender person --  
12    I'm just trying to understand if -- if you, Dr. Levine,  
13    could put all the young people that were experiencing  
14    gender dysphoria on a pathway toward being  
15    non-transgender, would you do that? 03:57:59

16          A     What I would say about that, if I could put  
17    them on a pathway of being non-transgender, I would  
18    expect that the vast majority of them would end up to  
19    be homosexual in their orientation. And the  
20    cisgender with -- you know, if they were males, they 03:58:16  
21    would probably be cisgender with a little feminine  
22    aspects to them, but they would be homosexual. And if  
23    they were biologic females, they would be cisgender  
24    lesbians with a little touch of masculine patterns and  
25    so forth. 03:58:35



1           So that would be cisgender to me, but I  
2       wouldn't be cisgender heterosexual. I think we already  
3       know scientifically the outcome of gender atypicality.  
4       Cross-gender atypicality in boys and girls is  
5       homosexual orientation. 03:58:52

6           Q   Is it your opinion that it's better to be a  
7       cisgender homosexual than a transgender heterosexual?

8           MR. BROOKS: Objection to the form of the  
9       question.

10          THE WITNESS: Well, you do no harm to your 03:59:09  
11       stability. You do no harm to your anatomy. You do no  
12       harm to your physiology. In that sense, I think -- you  
13       don't -- you don't risk any of the complications of  
14       cross-sex hormones, and you don't risk any of the  
15       complications of surgery. And I think it's probably -- 03:59:24  
16       although I can't tell you the facts, but I do believe  
17       it's probably easier to be a gay person in society than  
18       to be a trans person. And I don't mean it's easy to be  
19       any sexual minority in our society.

20       BY MS. HARTNETT: 03:59:43

21          Q   Do you know what autogynephilia is?

22          A   I -- I didn't understand what you just said.

23          Q   Apologies. Do you know what autogynephilia  
24       is?

25          A   Yes. 03:59:56

1 Q What is autogynephilia?

2 A Well, "autogynephilia" is a word that means  
3 love of the self as a woman. It's a characteristic of  
4 internal life that was popular in the trans literature,  
5 beginning in about 1988. It was a concept suggested by 04:00:11  
6 Ray Blanchard of Toronto. It was a supposition that --  
7 that autogynephilic trans people had a form of  
8 paraphilia and that it -- I think it was a concept that  
9 replaced pretty much the concept of fetishistic  
10 transvestism that had existed since the 1900s, early 04:00:44  
11 1900s.

12 So at about -- the trans community objected to  
13 the idea of autogynephilia, very profoundly objected to  
14 the idea.

15 Anne Lawrence, who is a transsexual 04:01:06  
16 researcher, wrote a book on men who are trapped in  
17 men's bodies, and it was all about gyne- --  
18 autogynephilia, men who -- who recognized that they  
19 were autogynephilic.

20 I recently had a patient who came to see me 04:01:15  
21 because he couldn't find anyone who knew anything about  
22 autogynephilia.

23 But I think you don't find that word used in  
24 the literature -- in the modern literature anymore.  
25 Because I think with 2011 standards of care, there was 04:01:29

1 much less interest in the pathways to transgenderism  
2 and more interest in the treatment of transgenderism,  
3 and so it became too many advocates, politically  
4 irrelevant and obnoxious to -- to even use the term  
5 "autogynephilia." 04:01:55

6 Q Do you find autogynephilia to be a helpful  
7 concept?

8 A For some people.

9 Q Have you ever heard it said that transgender  
10 people are either gay, mistaken or have autogynephilia? 04:02:06

11 MR. BROOKS: Objection.

12 THE WITNESS: I don't recall hearing that  
13 sentence before.

14 BY MS. HARTNETT:

15 Q Do you think that that -- is that something 04:02:19  
16 that you would agree with, that being transgender --  
17 people think that transgender are either gay, mistaken  
18 or have another malady, like autogynephilia?

19 MR. BROOKS: Objection.

20 THE WITNESS: It's not something that I would 04:02:32  
21 summarize by saying. Those three options seem  
22 pejorative and unscientific.

23 BY MS. HARTNETT:

24 Q Do you think the term --

25 A I'm sorry, I -- I object to the idea of 04:02:50

Page 226

1 mistaken.

2 Q Do you think the term or that use of  
3 autogynephilia is obnoxious?

4 A No.

5 Q Do you think that being transgender is a 04:03:07  
6 paraphilia?

7 MR. BROOKS: Objection.

8 THE WITNESS: To the extent that -- to the  
9 extent that autogynephilia is a paraphilia and that  
10 some men develop a transgender identity as a 04:03:18  
11 consequence of autogynephilic behaviors, that was --  
12 that may be one pathway towards transgender identity.

13 But I wouldn't certainly -- I -- I certainly  
14 would not say that at all transgenders or most  
15 transgendered people are autogynephilic. 04:03:38

16 BY MS. HARTNETT:

17 Q I mentioned the -- one possible formulation  
18 that people that are identifying as trans are just gay,  
19 mistaken or have a malady like autogynephilia, and I  
20 think you said that you took issue with the notion of, 04:03:55  
21 among other things, the idea of it being a mistake; is  
22 that fair?

23 A I -- yeah, I take -- I take issue with that,  
24 yeah.

25 Q Why? 04:04:05

Page 227

1           A    A mistake is something that a patient decides  
2    after they've trans- -- detransitioned and they say it  
3    was a mistake to do that.

4           It's not something I would say. I would say  
5    that they -- they have a current gender identity, and       04:04:21  
6    I'm not sure they're -- I'm not sure anyone's gender  
7    identity is not going to evolve in some way in the  
8    future. Especially I would like to say that about  
9    young adolescents.

10           But please don't -- please don't quote me       04:04:38  
11    because I have never authored that sentence.

12           Q    Thank you. Do you think that transgender  
13    identity is something that can be cured?

14           A    Can be cured?

15           Q    Yeah.                                       04:04:54

16           A    Is that what you said?

17           MR. BROOKS: Objection.

18    BY MS. HARTNETT:

19           Q    Cured.

20           A    If you read the end of my paper on the patient   04:05:02  
21    who trans- -- detransitioned 30 years ago, I think I  
22    said something like even though medical psychiatric  
23    knowledge does not know how to transform a person from  
24    a trans state to a cis state or a previous state, it  
25    doesn't mean that life doesn't transform people into       04:05:25

Page 228

1 detransitioned people.

2 We need to understand the modesty and the  
3 differences between what we know how to do to create  
4 behavioral change, which is quite modest throughout  
5 psychiatry and what happens to people over time if we 04:05:44  
6 take a life course perspective.

7 So my case illustration in that case was  
8 Dr. Levine did not change his -- did not cause his  
9 detransition at all; right? Life processes, which he  
10 described in great detail in the that paper, changed, 04:06:02  
11 and it took him years to make that change, years of  
12 anguish, years of the sense of inauthenticity as a  
13 woman, which at first he tried to deny.

14 So I would -- I would refer you to the last  
15 paragraph in that paper if you wanted to find out how I 04:06:22  
16 said it. I can't -- I can't quote it. I'm just  
17 paraphrasing it if for you.

18 Q But is that an example of someone that you  
19 think was cured?

20 MR. BROOKS: Objection. 04:06:41

21 THE WITNESS: It was an example of a person  
22 who changed their presentation and now is terribly  
23 embarrassed about what he had -- I can call him "he"  
24 now -- what he had done, or what she had done; right?

25 And now -- and it is now a person who -- I think I'm 04:06:57

Page 229

1 quoting -- hates all the advocates of the -- in the  
2 trans world for, he believes, misleading people that  
3 they can have a happy life.

4 But that's just one person's opinion, you  
5 know. 04:07:13

6 But if you read the paper, I think, you know,  
7 there's lots to think about in the paper.

8 Q Is it embarrassing to be transgender?

9 A In -- in some settings, it probably is, yes.

10 Q Do you think that transitioning, for a 04:07:28  
11 transgender person, is something that you find to be an  
12 embarrassing concept?

13 A No.

14 Q Well, you said that your -- I'm just -- I'm  
15 not putting your patient's words in your mouth, but you 04:07:38  
16 were describing him as having been embarrassed by the  
17 whole thing. I -- I took that to mean he was  
18 embarrassed by having transitioned; is that right?

19 A Yes, he's now angry at himself and angry at  
20 those who facilitated his original transition. 04:07:52

21 But that's one person, you know.

22 Q But do you feel embarrassment for your  
23 patients that have to go through transition?

24 MR. BROOKS: Objection.

25 THE WITNESS: Do I feel embarrassment? No. I 04:08:09

Page 230

1 feel --

2 BY MS. HARTNETT:

3 Q I'm just --

4 A No. That's -- that would not describe a

5 dominant feeling I have. I have concern for my 04:08:20

6 patient. I have worry about this, but I'm not

7 embarrassed by it.

8 Q Is shame one of the feelings?

9 MR. BROOKS: Objection.

10 Of whom?

04:08:35

11 BY MS. HARTNETT:

12 Q Do you (technical difficulty) shame for them?

13 MR. BROOKS: Objection.

14 THE WITNESS: I'm a little hard of hearing,

15 and I actually could not discern what you said. 04:08:43

16 BY MS. HARTNETT:

17 Q Sorry, I'll speak up.

18 I was asking if you felt shame for your

19 patients experiencing transition.

20 A No, I'm not -- am I ashamed? 04:08:52

21 Q Yes.

22 A No.

23 Q Do you think that people can change their

24 sexual orientation?

25 MR. BROOKS: Objection; outside the scope of 04:09:10

Page 231



1 this witness's testimony.

2 THE WITNESS: I think the work of Lisa Diamond  
3 has demonstrated that among women who are -- who assert  
4 a lesbian identity, that that lesbi- -- there is a lot  
5 of two-way traffic between a heterosexual identity and 04:09:43  
6 a homosexual identity, or orientation, we would say,  
7 and -- so I don't know how to change a person's sexual  
8 orientation, but I do think, especially among natal  
9 women, sexual orientation is -- people experiment with  
10 different ways of life and that there are -- there's 04:10:06  
11 more two-way traffic between lesbian and a heterosexual  
12 life among women. There's much more bisexual behavior  
13 and bisexual eroticism among natal born females than  
14 there is among natal born males.

15 So that would be my answer to your question, 04:10:29  
16 without a yes-or-no answer.

17 Q Do you agree that gay people, on average, have  
18 a harder time than straight people, on average, just  
19 navigating life?

20 A Yes. 04:10:40

21 MR. BROOKS: Objection.

22 BY MS. HARTNETT:

23 Q Do you have similar views to those you've  
24 expressed about caution before encouraging youth to be  
25 transgender -- or to inhabit their transgender gender 04:10:51

Page 232

1 identity? Do you have similar views about youth  
2 expressing homosexuality?

3 A No.

4 Q Why not?

5 A Well, again, I think I'm going to make a 04:11:03  
6 distinction between homosexuality as it occurs in men,  
7 as it occurs in women, and the eroticism of a person is  
8 a bunch of fantasies and thoughts and attractions that  
9 makes sex comfortable or anxious and makes romance easy  
10 or hard to -- to participate in, and given the power of 04:11:37  
11 orientation, I believe that people have to come to  
12 grips with -- with who they are attracted to and -- and  
13 what is easy for them and what is difficult for them.

14 And so I just think that that's part of the  
15 human landscape and that people can -- can -- they 04:12:03  
16 know -- they know their orientation, and then they have  
17 to choose how -- how to act or not act on their  
18 orientation, and it's a very personal, private and  
19 often difficult decision, and I respect that, and I'm  
20 happy to hear about it when it comes up in my gay 04:12:23  
21 patients.

22 And, you know, I see a lot of people who have  
23 orientations that are not heterosexual.

24 Q I'm just curious why the same principle  
25 doesn't hold for people that have a gender identity of 04:12:37

Page 233

1 transgender, if they have an innate sense that that's  
2 their identity, why would you not approach that the  
3 same way you approach homosexuality.

4 MR. BROOKS: Objection.

5 THE WITNESS: Because homosexuality does not 04:12:51  
6 involve the -- it's not against the first principle of  
7 medical ethics; above all, do no harm.

8 It doesn't involve changing the body's  
9 reproductive capacity. It doesn't change the body's  
10 sexual physiology, you see. It doesn't change the 04:13:08  
11 ability to find a love partner, a stable mate. It --  
12 it -- it doesn't -- trans- -- we're talking about here  
13 changing the anatomy, changing the physiology, creating  
14 the inability to have a child, interfering with the  
15 ability to have sexual pleasure as we understand it in 04:13:32  
16 the general population as, you know, orgasm.

17 So -- so we understand -- transsexuality is  
18 exposing yourself to surgical complications. And  
19 surgical transformation of a teenager, before a child  
20 has lived long enough to -- to come to grips with the 04:13:51  
21 multiple dimensions of being an older person, that is,  
22 a 20-year-old or a 19-year-old, and romance and so  
23 forth, that's why it's different. It's not the same.

24 You're trying to take a principle and -- and  
25 apply it to a group of people that -- that you're 04:14:10

Page 234

1 talking about the possibility of harming them. Not  
2 just their -- their -- their reproductive capacity, but  
3 harming them in numerous ways. And they have to take  
4 responsibility for that choice, and they -- I just have  
5 been saying all morning and all afternoon, I just want 04:14:29  
6 them to be informed.

7 And, you know, 13-year-old passionate kids  
8 cannot be informed easily.

9 Q I'm glad you brought that up.

10 Could you turn to paragraph 202 of your 04:14:49  
11 declaration, page 69.

12 MR. BROOKS: Yeah. And it was long. I didn't  
13 think it was that long.

14 Page 69. Let's see here.

15 You said 202. Yes, we have that on the 04:15:13  
16 screen.

17 BY MS. HARTNETT:

18 Q Yeah, I wanted to ask you, these are within a  
19 larger section, well, about various harms that come  
20 from, I guess, treating or -- or validating a 04:15:26  
21 transgender person's identity. But this paragraph 202  
22 talks about harm to family and friendships, and then  
23 203 talks about sexual-romantic harms.

24 Do you see that?

25 A Yes. 04:15:41

Page 235

1           Q   And my question is, the harms you set forth in  
2   these paragraphs -- first of all, you cite your -- only  
3   your own publications for these two paragraphs; is that  
4   correct?

5           A   Yes, it's my only citation. 04:15:49

6           Q   Is there any other basis for these assertions?

7           A   Well, there's an article in the Archives of  
8   Sexual Behavior about being the fetish object, when --  
9   a transsexual adult talking about -- a survey of  
10   transsexual adults, that they get really upset that 04:16:10  
11   people want to have sex with them because they're what  
12   they call a fetish object, that they're -- they -- they  
13   have attractions to transsexuals and they want to have  
14   an experience.

15                 And so it's really about the frustration of 04:16:25  
16   adult tran- -- sexually active transsexual, I think --  
17   transsexuals who are complaining about difficulties in  
18   romantic relationships because they feel they're being  
19   used by people with perverse adventures, some  
20   curiosities, as opposed to genuine romantic 04:16:47  
21   relationships.

22                 So I was happy to read that article because it  
23   had confirmed one of the stories that I had been  
24   hearing from many patients over the years by --

25           Q   Can you direct me -- 04:17:00

1 A Sorry.

2 Q What article is that? Can you direct me --

3 A I -- I certainly can get you the reference.

4 It's in the Archives of Sexual Behavior. It's probably

5 within the last two years. And I think the first 04:17:13

6 author's name is either -- starts with an A, B or C.

7 Anyway, I -- you -- it's about tran- -- in the

8 title, there's something like "transgender and fetish

9 objects." So I --

10 Q Okay. 04:17:38

11 A I can -- if you want, I will eventually give

12 you the exact reference, yeah, but --

13 Q That's --

14 A -- you're -- you're not interested in wasting

15 time, I'm sure. 04:17:48

16 Q No, no, I -- I -- I just want to know the

17 basis for these -- these paragraphs, so I appreciate

18 you telling me that.

19 My question is -- you know, I read 202 and

20 203, and you say -- you list various perceived harms 04:17:58

21 and challenges from being transgender; is that fair?

22 A Yes.

23 Q What I'm confused about is, is this premised

24 on the notion that there's a way to dissuade someone

25 from being transgender so that they don't have these 04:18:14

Page 237

1 outcomes?

2 A Exactly. I -- this is what I'm trying to do.

3 This is why I say to parents, you know, we have to

4 support and love this child regardless of what --

5 what -- what they pass through because mental health is 04:18:35

6 determined, in part, by the ability to -- to be valued

7 by your family before you can be valued by other

8 people.

9 And I think the outcomes -- I mean, so many of

10 my patients have in fact been alienated from their 04:18:53

11 families. And -- sorry -- you've heard about runaway

12 kids and throwaway kids and -- and I --

13 Q Well, why isn't -- sorry, why isn't that

14 the family's --

15 MR. BROOKS: Counsel -- Counsel, the witness 04:19:08

16 is busy talking, in the middle of his --

17 MS. HARTNETT: Yeah, I'm aware of that, but

18 he's also taking a long time to respond to

19 straightforward question.

20 BY MS. HARTNETT: 04:19:18

21 Q My question is whether or not --

22 MR. BROOKS: Counsel, the witness is entitled

23 to finish his answer.

24 MS. HARTNETT: He's not entitled to

25 filibuster. 04:19:23

Page 238

1 MR. BROOKS: He's not filibustering; he's  
2 answering your question.

3 MS. HARTNETT: I've been very permissible all  
4 day with his answers, but I'm happy to have him finish  
5 his answer.

04:19:35

6 MR. BROOKS: Thank you.

7 If you have -- if you feel that you haven't  
8 finished, you may finish.

9 THE WITNESS: I have heard considerable  
10 stories over the years about family relationships,  
11 about alienations, about isolation. And in answer to  
12 your question, in -- in hearing those stories, it has  
13 led me to counsel both the patient and the parents to  
14 do whatever they can to maintain their relationships,  
15 despite what the child or the grownup, the adult, has  
16 decided because I know the suffering of mothers and  
17 fathers and grandmothers and grandfathers and of  
18 patients.

04:19:43

19 And so it's an adverse outcome to have family  
20 alienation. And from the very beginning, I say the  
21 first principle evaluation is to preserve family  
22 relationships, and I think you can read that in my 2021  
23 paper.

04:20:19

24 BY MS. HARTNETT:

25 Q My question is -- so in the example of the

04:20:31

Page 239



1 child who's -- or the adolescent who's experiencing  
2 gender dysphoria and would like to be affirmed and the  
3 parents that are horrified, why isn't the answer to try  
4 to work with the parents to be more tolerant and  
5 understanding rather than to try to change the child? 04:20:48

6 A I think I do work with the parents. I do.  
7 But it's not an either-or thing. It's not an either-or  
8 phenomenon.

9 And just because --

10 Q Is your -- 04:21:07

11 A Just because we work with a parent doesn't  
12 mean I'm capable of changing the parent's behavior,  
13 changing the parent's values, changing the parent's  
14 knowledge of the child and changing the parent's fear  
15 for their future. 04:21:22

16 Q I'm just puzzled by these paragraphs because  
17 it strikes me that the person is going to be  
18 transgender regardless if they get transgender  
19 healthcare and, therefore -- I don't understand the  
20 point that giving them healthcare is going to harm them 04:21:37  
21 more than they would have otherwise been harmed if they  
22 were transgender, but just without healthcare.

23 MR. BROOKS: Objection; assumes facts not in  
24 evidence, argumentative.

25 THE WITNESS: I accept the fact that you don't 04:21:47

Page 240

1 understand.

2 BY MS. HARTNETT:

3 Q Can you explain to me why -- so, I guess --  
4 let me ask you this: Do you disagree that these people  
5 are transgender even if they don't get the healthcare? 04:21:56

6 MR. BROOKS: Objection.

7 THE WITNESS: I agree that the patient who  
8 says that "I'm transgender" is currently transgender.  
9 That's what I believe. They're currently transgender.

10 Do I believe they will always be transgender? 04:22:14

11 No.

12 Can I predict which ones will be transitioned  
13 and not? Not -- not with any certainty, no.

14 But, you see, I believe that many of the  
15 assumptions behind your questions is that 04:22:28  
16 transgenderism is a fixed phenomenon, it never changes,  
17 and I -- if I am correct that that is your assumption,  
18 then you and I disagree.

19 BY MS. HARTNETT:

20 Q And do you agree that there's no evidence 04:22:44  
21 to -- assuming those are different assumptions, that  
22 there's not evidence out there that would prove either  
23 of us correct on that one?

24 MR. BROOKS: Objection.

25 THE WITNESS: No, I don't agree with that at 04:22:53

Page 241

1 all. Not at all.

2 BY MS. HARTNETT:

3 Q Do you believe that --

4 A I -- and -- and I give you evidence of

5 detransition. 04:22:59

6 Q Is there anything other than anecdotal  
7 evidence to say whether or not gender identity is fixed  
8 versus not labeled?

9 MR. TRYON: Objection.

10 THE WITNESS: You know, you and I have 04:23:13  
11 different ideas of what is anecdotal.

12 Is Lisa Diamond's work anecdotal, about  
13 homosexuality? Is that anecdotal?

14 And -- and, you know, there is something  
15 called a proof of concept study that if you can 04:23:29  
16 demonstrate that it is possible, for example, to cure a  
17 particular cancer with a new drug that has never been  
18 tried before, that proof of concept then leads to more  
19 definitive studies.

20 And we're in -- we're -- we already have proof 04:23:47  
21 of concept that -- that there are many people who  
22 detransition.

23 In fact, if you look at the UK studies, the  
24 two UK studies that have been done in the last, I  
25 think, six months, we all now have a rate of 04:24:07

Page 242

1 detransition. We now, for the first time, have a rate  
2 of detransition data.

3 And so I would say it's not anecdotal.  
4 It's -- it's an emerging new branch of transgender  
5 science, so to speak, or knowledge that the error rate 04:24:24  
6 in trans -- in -- in -- in affirmative care is now  
7 becoming more clear than it ever was.

8 Q You are aware that some transgender -- many  
9 transgender people have fulfilling romantic  
10 relationships and family relationships; correct? 04:24:37

11 MR. BROOKS: Objection.

12 THE WITNESS: I am aware.

13 BY MS. HARTNETT:

14 Q In paragraph 203, you say (as read):  
15 After adolescence, transgender 04:24:47  
16 individuals find the pool of  
17 individuals willing to develop a  
18 romantic and intimate relationship  
19 with them to be greatly diminished."

20 A Yes. 04:24:57

21 Q Do you have any basis for making that  
22 statement other than your own anecdotal experience?

23 A Well, if you look at -- if you look at  
24 cross-sectional data about the percentage of people who  
25 are married and cohabitating among trans people versus 04:25:09

Page 243

1 cis people, there are -- there are far less marriages,  
2 and there are far less stable relationships.

3 If you look at a series of psychosocial  
4 histories of -- of patients, many of them do not come  
5 to us with stable functional relationships. I don't -- 04:25:31

6 Q You --

7 A I actually -- I actually don't think this  
8 is -- this is anecdotal, but it is perhaps  
9 impressionistic based upon 50 years of taking care of  
10 these people. 04:25:50

11 Q Is it possibly also dated?

12 MR. BROOKS: I'm -- I'm sorry, I couldn't hear  
13 the question.

14 BY MS. HARTNETT:

15 Q Is the notion also possibly dated? 04:25:57

16 A Well, the big hope in the trans advocate  
17 community has been as society improves, the lives --  
18 society recognizes and accepts transgender people,  
19 there will be less suffering and less isolation in  
20 trans people. That -- that is -- you can find that in 04:26:15  
21 many, many studies that -- that articulate the -- the  
22 frequency of psychiatric problems. And there's the  
23 hope that as -- the whole idea of the minority stress  
24 theory is that if we improve society, fewer people will  
25 suffer. 04:26:40

Page 244

1 I don't know whether that -- I hope it's true  
2 that as society has improved its defense of -- of  
3 gender diverse people, that more gender diverse people  
4 will be able to have satisfying, intimate, stable  
5 relationships. I hope that is true. And I hope it 04:26:56  
6 will be worked through in ten years.

7 Q Thank you. In the paragraph 202, you say, in  
8 the middle of that paragraph (as read):

9 "By adulthood, the friendships of  
10 transgender individuals tend to be 04:27:11  
11 confined to other transgender  
12 individuals (often 'virtual' friends  
13 known only online) and the generally  
14 limited set of others who are  
15 comfortable interacting with 04:27:24  
16 transgender individuals."

17 Do you see that?

18 A Yes.

19 Q Is there a basis for that beyond your own --  
20 you cite yourself for that, but are you aware of 04:27:39  
21 whether or not that actually represents the lived  
22 experience of transgender individuals in 2022?

23 A Well, I think in that sentence, if I could  
24 edit it, I would emphasize rather than "by adulthood,"  
25 I would say "during adolescence." And the basis is not 04:28:00

Page 245

1 just my clinical experience. The basis is the clinical  
2 experience of the people in the psychosocial therapy  
3 group that I mentioned earlier this morning. That  
4 seems to be a broad consensus, that many of their trans  
5 people are -- have social isolation problems in their 04:28:19  
6 friendships and their romances, and I've seen this in  
7 my practice. They really are occurring through --  
8 through the Internet.

9 And when they're not occurring through the  
10 Internet, they're occurring with people in the sexual 04:28:34  
11 minority community, other people who may not be trans  
12 themselves, but who are excited by their trans and  
13 supportive of their trans status.

14 So that's the basis of it.

15 Q You've referred to the trans community, at 04:28:53  
16 times, in our conversation today; correct?

17 A I'm sure I've said that, yes.

18 Q Are you aware that the trans community, as a  
19 general matter, takes issue with your viewpoint?

20 MR. BROOKS: Objection. 04:29:08

21 THE WITNESS: Yeah, I am aware that there are  
22 members in the trans community who find me a hateful  
23 person and who believe that I'm against medical,  
24 surgical and social care and against the civil rights  
25 of transgender people. 04:29:28

Page 246

1 I can't control what they believe about me,  
2 you see. But I am aware that some people are very  
3 appreciative of me and other people think I'm an enemy.

4 BY MS. HARTNETT:

5 Q If 95 percent of trans people opposed your 04:29:47  
6 methods, do you think that they would make sense to  
7 continue suggesting them for trans people?

8 MR. BROOKS: Objection --

9 THE WITNESS: What was the --

10 MR. BROOKS: -- lack of foundation, calls for 04:29:56  
11 speculation.

12 THE WITNESS: What was the last part of your  
13 sentence?

14 BY MS. HARTNETT:

15 Q I'm just trying to ask you if -- like, say, 04:30:04  
16 assuming 95 percent of trans people opposed your  
17 methods, would you have concern for continuing to  
18 promote them?

19 MR. BROOKS: Objection.

20 THE WITNESS: To promote my methods? 04:30:13

21 BY MS. HARTNETT:

22 Q Towards --

23 MR. BROOKS: Objection.

24 BY MS. HARTNETT:

25 Q -- trans people. 04:30:17

Page 247



1           A     My method of -- of informed consent and my  
2     method of -- of being thoughtful and considerate  
3     about -- about -- about the sources and the  
4     consequences?

5 I don't believe that -- that a person 04:30:32  
6 thinks -- misunderstands my position would make me give  
7 up my position. If you show me that -- that my  
8 position is not tenable in a -- in a -- in a -- in a  
9 strong scientific basis, I'm certainly able to change.

10                   The fact that public opinion, in some                   04:30:53  
11    commun- -- some sectors of the community, you know,  
12    think -- misunderstand me and -- and don't really know  
13    what I'm saying, you see, that -- that wouldn't make me  
14    give it up.

15                   And I don't know how you could assume that                   04:31:09  
16       95 percent of people, you see. I don't know -- you're  
17       just presuming things.

18 Q Are you opposed to civil rights for  
19 transgender people?

20 | A Absolutely not. I am not -- 04:31:20

21 Q Do you understand --

22 A I am not --

23	Q	Sorry?
----	---	--------

24           A     -- opposed to civil rights for transsexual  
25     people.04:31:26

Page 248

1 Q Do you know that your opinion in this case is  
2 being used to support excluding an 11-year-old  
3 transgender girl from a middle school track team that  
4 wants her to play on it?

5 MR. BROOKS: Objection. 04:31:36

6 MR. TRYON: Objection.

7 MR. BROOKS: Foundation.

8 THE WITNESS: I already told you I don't know  
9 the details of this particular case, the B.P.J.

10 BY MS. HARTNETT: 04:31:50

11 Q I know. And I'm going to tell you that your  
12 opinion is being used by some of the defendants in this  
13 case to seek to deny an 11-year-old transgender girl  
14 from playing on a girls' cross-country and track team  
15 where her school otherwise would be willing to have her 04:31:57  
16 play, with the support of her parents and family.

17 MR. BROOKS: Objection.

18 There's no question pending, so far as I  
19 understand.

20 BY MS. HARTNETT: 04:32:12

21 Q Do you know that that's what your opinion is  
22 being used for in this case?

23 MR. BROOKS: Objection.

24 THE WITNESS: I am not aware.

25 ///

1 BY MS. HARTNETT:

2 Q Do you object to your opinion being used to  
3 deny an 11-year-old girl the ability to run on a track  
4 team at her middle school in West Virginia when she's  
5 already otherwise socially transitioning and is 04:32:26  
6 supported by her family and her school?

7 MR. BROOKS: Objection; mischaracterizes the  
8 witness's opinions.

9 THE WITNESS: I've heard the objection that  
10 you're -- you're mischaracterizing my opinion. 04:32:41

11 I -- I don't understand.

12 My opinion has to do with the things I've  
13 testified to. I did not testify to anything about an  
14 11-year-old girl.

15 And what you are telling me about, I trust 04:32:54  
16 you're telling me the truth.

17 I actually don't think about -- when I think  
18 about civil rights, I am thinking much more about, I  
19 think, older people, you know, housing, educational  
20 discrimination in colleges and things like that, 04:33:18  
21 vocation, right to vote.

22 You will have to -- it's a -- it's a new thing  
23 for me to even think about the civil rights of a  
24 six-year-old or a seven-year-old or an eight-year-old.

25 ///

1 BY MS. HARTNETT:

2 Q Well, your -- I'll help you.

3 Your opinion was also submitted in the case of  
4 Lindsay Hecox, a college student who was seeking to run  
5 consistent with her identity, gender identity, on her 04:33:39  
6 college cross-country and track team.

7 A Yes.

8 Q You're aware that your -- your testimony was  
9 submitted in support of prohibiting her from running on  
10 the team? 04:33:51

11 MR. BROOKS: Objection; mischaracterizes that  
12 case.

13 THE WITNESS: Again, my testimony --

14 MS. HARTNETT: I'm counsel of record in that  
15 case, and I can tell you that I'm accurately 04:34:03  
16 characterizing the case, which is that Dr. Levine's  
17 declaration was submitted in support of a motion to  
18 ban -- to -- to uphold a statute that would not permit  
19 Lindsay Hecox to run, consistent with her gender  
20 identity, on a college sports team. 04:34:15

21 And I'm asking him, in light of his statement  
22 that he does not oppose transgender civil rights, how  
23 he can reconcile that with having his testimony used in  
24 this manner.

25 MR. BROOKS: Objection; argumentative. 04:34:26

Page 251

1           The witness has explained that his opinions  
2       are about science.

3           MS. HARTNETT: Please stop testifying.

4           MR. BROOKS: Please stop arguing.

5       BY MS. HARTNETT: 04:34:35

6           Q     Dr. Levine, how can you reconcile --

7                 (Simultaneous speaking.)

8           MR. BROOKS: This is not a debate. This is a  
9       deposition.

10          MS. HARTNETT: And this -- you're not the 04:34:45  
11       witness, either. I'd like to ask Dr. Levine and get an  
12       answer as to how he can reconcile having his testimony  
13       be filed to oppose the participation of a college  
14       student on her college team consistent with her gender  
15       identity. 04:34:59

16          THE WITNESS: I don't find it easy to  
17       reconcile -- this is just part of some of the great  
18       conflict embedded in -- in -- my -- my knowledge is  
19       about science. And I do recognize that people  
20       interpret what I say in various ways and -- but I don't 04:35:25  
21       think I'm responsible for how that is interpreted. I'm  
22       just making statements based on my knowledge, based on  
23       my clinical experience. And I am uncomfortable, at  
24       times, with various aspects of what people make of --  
25       of what I have said. 04:35:46

Page 252

1 I -- I am uncomfortable, to some extent, by  
2 how the lawyers have used some of my -- you know, at  
3 times. And I am certainly uncomfortable at how the  
4 trans community has used some of what they think I  
5 stand for.

04:36:04

6 I'm trying to be clear what I -- what I think  
7 and what I stand for. And I am somewhat uncomfortable,  
8 at times, about many things, including this, but --

9 BY MS. HARTNETT:

10 Q Do you understand that you're being paid as an 04:36:16  
11 expert witness in both the Hecox case and in this case  
12 by the defendants in order to submit testimony that  
13 will be used against the participation of the  
14 transgender students?

15 MR. TRYON: Objection. 04:36:31

16 THE WITNESS: I don't think I fully understand  
17 that. I don't think -- I don't think that's -- I -- I  
18 guess the answer to the question is I don't fully  
19 understand it.

20 BY MS. HARTNETT: 04:36:48

21 Q Okay. Because I -- I'm -- I'm genuinely  
22 perplexed because you've said that you're supporting  
23 transgender civil rights and you wish for a time where  
24 there's less discrimination and that -- yet your  
25 submission is not being submitted in a neutral manner 04:36:59

Page 253

1 in this case; it's being submitted in support of the  
2 side of the case that's seeking to defend the exclusion  
3 of the transgender student.

4 And so we don't need to belabor the point, but  
5 I'm just trying to -- I'm happy to tell you that. And 04:37:11  
6 if you have something you would like to say on the  
7 record as to how you can reconcile the use of your  
8 testimony for that, with the views you've expressed in  
9 this deposition about seeking to make the world better  
10 for transgender people, I would appreciate your chance 04:37:24  
11 to respond to that.

12 MR. BROOKS: Objection; mischaracterizes --

13 MR. TRYON: Objection.

14 MR. BROOKS: -- testimony and is outside the  
15 scope of this witness's expert opinions. 04:37:30

16 THE WITNESS: Well, I thank you for pointing  
17 that out. I will think about it more.

18 MS. HARTNETT: Thank you.

19 I think we can take a break now.

20 THE VIDEOGRAPHER: We are off the record at 04:37:46  
21 4:38 p.m.

22 (Recess.)

23 THE VIDEOGRAPHER: We are on the record at  
24 4:55 p.m.

25 MS. HARTNETT: Thank you. 04:55:19

1 BY MS. HARTNETT:

2 Q Hi, Dr. Levine. We discussed the SEGM  
3 organization earlier.

4 Do you recall that?

5 A I do. 04:55:25

6 Q And you described it as an evidence-based  
7 organization; correct?

8 A Yes. That's the title, yes.

9 Q And you view them as an organization that  
10 strictly adheres to the facts; correct? 04:55:35

11 A Well, facts are interpreted, but, yes, they  
12 have a basis in facts.

13 Q In January, you earlier, in the deposition,  
14 mentioned that you did a podcast; correct?

15 A I did. 04:55:53

16 Q And that podcast was with two of the lead  
17 advisors of SEGM; is that right?

18 A I don't think they're the lead advisors.  
19 They're -- they were members of the psychotherapy  
20 group. I don't -- I don't -- I wouldn't describe them 04:56:10  
21 as lead advisors to SEGM, no.

22 Q Okay. They're -- are they affiliated with  
23 SEGM in some way?

24 A They're members of SEGM, yeah.

25 Q And that would be Sasha Ayad and Stella 04:56:21

Page 255



1 O'Malley; is that right?

2 A Yes.

3 Q Were the thoughts that you shared with them  
4 during that podcast all truthful?

5 A I hope so. 04:56:32

6 Q Okay. I'm just going to -- and I referenced,  
7 before we went on the record, uploading a few audio  
8 files. I've excerpted some excerpts from the talk you  
9 gave, which was, for the record, available at  
10 [https://gender-a-wider-lens.captivate.fm/episode/60-](https://gender-a-wider-lens.captivate.fm/episode/60-pioneers-series-we-contain-multitudes-with-Stephen--S-T-E-P-H-E-N) 04:56:53  
11 [pioneers-series-we-contain-multitudes-with-Stephen --](https://gender-a-wider-lens.captivate.fm/episode/60-pioneers-series-we-contain-multitudes-with-Stephen--S-T-E-P-H-E-N)  
12 [S-T-E-P-H-E-N](https://gender-a-wider-lens.captivate.fm/episode/60-pioneers-series-we-contain-multitudes-with-Stephen--S-T-E-P-H-E-N) -- Levine, dated January 28th, 2022.

13 Dr. Levine, do you recall whether the podcast  
14 was -- the conversation you had with Ms. O'Malley and  
15 Ms. Ayad actually took place on January 28th? 04:57:38

16 A I think it did, yes.

17 Q Okay. So I'm going to just play for you an  
18 excerpt, and I'll ask you a question about it.

19 MS. HARTNETT: Could you please play  
20 Exhibit 89. 04:57:56

21 (Exhibit 89 was marked for identification  
22 by the court reporter and is attached hereto.)

23 THE WITNESS: I'm not hearing anything.

24 THE VIDEOGRAPHER: Just -- just a moment. I  
25 believe he's working on it. 04:58:22

Page 256

1 MR. REISBORD: Were you unable to hear that?

2 THE VIDEOGRAPHER: Correct.

3 MS. HARTNETT: We did not hear that.

4 MR. REISBORD: Let my try one more time.

5 (Video Clip Played.) 04:58:40

6 "In 1973" --

7 MR. REISBORD: Are you able to hear that?

8 MS. HARTNETT: Yes.

9 THE WITNESS: Yes.

10 MR. REISBORD: Okay. 04:58:45

11 (Video Clip Played.)

12 "In 1973, after 30 days in -- in practice, I

13 was at a department of psychiatry and had a halftime

14 private practice. I got a man who told me he was

15 sitting in the backyard with a gun in his mouth, under 04:59:00

16 his oak tree, and he decided either to kill himself" --

17 MS. HARTNETT: We can't hear it anymore.

18 (Video Clip Played.)

19 -- "see a psychiatrist who used to be my

20 supervisor a month ago, and my supervisor said, Well, 04:59:17

21 there was an expert in human sexuality down at the

22 university. Why don't you go see him?

23 "And that was the beginning of my career

24 working with people who wanted to change their sex.

25 "You know, he almost killed himself at that 04:59:33

Page 257

1 point in 1973."

2 BY MS. HARTNETT:

3 Q Dr. Levine, was that the patient that you were  
4 referring earlier to in the deposition?

5 A Yes. 04:59:48

6 Q Rutherford or Ruth; correct?

7 A Yes.

8 MS. HARTNETT: Could you play tab 40, please.

9 MR. REISBORD: Tab 40 would be Exhibit 90.

10 MS. HARTNETT: Oh, sorry, thanks. 05:00:07

11 (Exhibit 90 was marked for identification

12 by the court reporter and is attached hereto.)

13 (Video Clip Played.)

14 "And -- and nine years later, he in fact did  
15 kill himself after he changed his gender and left his 05:00:11  
16 family and left his country and then returned back to  
17 live in America and just decided to end his life. So  
18 that was my introduction, my nine-year introduction, to  
19 adults who wanted to change their sex.

20 "This was a highly accomplished man. He was 05:00:30  
21 the head of our county library system. He had a degree  
22 in divinity. And he was a joy to talk to. And he --  
23 one day, about four years before he actually killed  
24 himself, he slashed his -- at his neck, and when he was  
25 admitted to the hospital, he -- he told me that I was 05:00:55

Page 258

1       deficient as a therapist because I failed to  
2       investigate how angry he has been all of his life at  
3       his parents."

4       BY MS. HARTNETT:

5           Q     Dr. Levine, is what was just played an                   05:01:10  
6       accurate account of -- I'm sorry, is -- is what -- do  
7       you stand by the account that you provided to SEGM, as  
8       just played in that sequence?

9           MR. BROOKS:   Objection to the description.

10          THE WITNESS:   Are you asking if -- if -- if I       05:01:28  
11       said these things that you're recording --

12       BY MS. HARTNETT:

13          Q     Yeah, thank you, I'll ask a better question.

14                 Is that what you said on the SEGM podcast  
15       earlier this year?   05:01:40

16          A     I don't call this "the SEGM podcast."   This is  
17       a --

18          Q     I'm sorry.

19          A     -- podcast of these two women who have a  
20       business in providing information to others who are       05:01:47  
21       interested.

22                 So I --

23          Q     Okay.

24          A     -- did say these things, as you -- as is  
25       obvious, I said these things.                               05:01:56

Page 259

1 Q And they were truthful; correct?

2 A Was I telling the truth? Yes --

3 Q Yes.

4 A -- I was -- I tell --

5 Q Okay. 05:02:06

6 A -- the truth.

7 Q Sorry, it's partially a formality of -- I'm  
8 just trying to confirm that what you were saying to  
9 them is also true today, and so that's why I'm asking  
10 you the question, but I won't refer to it as "the SEGM 05:02:17  
11 podcast."

12 MS. HARTNETT: Could you please play tab 41,  
13 Exhibit 91.

14 (Exhibit 91 was marked for identification  
15 by the court reporter and is attached hereto.) 05:02:24

16 (Video Clip Played.)

17 "It was quite an educational experience for  
18 me, both as a he and as a she, and -- and she and I  
19 wrote a paper in the Archives of Sexual Behavior in  
20 19-, I think, -83 called Increasingly Ruth: Towards an 05:02:37  
21 understanding of sex reassignment surgery.

22 And then in 1984, when he died, I wrote a  
23 letter to the editor about Ruth's suicide.

24 Q Dr. Levine, was that a recording of you  
25 speaking to the podcast earlier this year? 05:03:03

Page 260

1 A Yes.

2 Q You mentioned that you wrote a letter to the  
3 editor after Ruth's death, and in that letter, you said  
4 that Ruth's unfortunate legacy to those who invested in  
5 her is psychologic injury due to her abandonment of 05:03:18  
6 them; is that correct?

7 A Would you repeat that? I don't recognize  
8 those words.

9 Would you repeat them slowly?

10 Q I'm sorry. Ruth's unfortunate legacy to those 05:03:30  
11 who invested in her is psychologic injury due to her  
12 abandonment of them.

13 A Yes, that was --

14 Q Did you write that?

15 A Yes. I don't want to give you more 05:03:39  
16 information than you're asking for, but -- the answer  
17 to your question is yes.

18 Q Thank you.

19 MS. HARTNETT: Could you play tab --

20 Exhibit 92, please. 05:04:01

21 (Exhibit 92 was marked for identification  
22 by the court reporter and is attached hereto.)

23 (Video Clip Played.)

24 "So I've been accused of being very  
25 conservative on this issue and biased by -- by that 05:04:06

Page 261

1 experience, and, in fact, I plead guilty. I am -- I --  
2 I -- that was my introduction."

3 Female: "Yeah."

4 "And it -- and, unfortunately, it's not the  
5 only case of -- of people who have aspirations who 05:04:21  
6 think that their troubles as a person will disappear  
7 if -- if they change their gender presentation and  
8 change their bodies and -- and only to discover that  
9 life is not as easy as they imagined, and they didn't  
10 escape much. 05:04:44

11 "So I plead guilty to being biased, and I  
12 think all of us have a kind of bias, and we ought to  
13 own it."

14 BY MS. HARTNETT:

15 Q Dr. Levine, were those your statements on the 05:04:55  
16 podcast earlier this year?

17 A Yes.

18 Q And were they your truthful statements?

19 A Yes.

20 MS. HARTNETT: Could you please play 05:05:10  
21 Exhibit 93.

22 MR. TRYON: This is Dave Tryon. I'm going to  
23 object to --

24 (Video Clip Played.)

25 "I have a Mas-" -- 05:05:16

Page 262

1 MR. TRYON: I'm going to object to to playing  
2 these excerpts without the full context.

3 MS. HARTNETT: And I will just say for the  
4 record that there is -- I think the -- the person that  
5 gave the podcast knows the context, and I've given the 05:05:26  
6 web URL for anyone to look at the full context.  
7 There's not a written transcript online.

8 MR. TRYON: My objection stands.

9 MS. HARTNETT: Of course. Thank you.

10 Could you play Exhibit 93, please. 05:05:43

11 (Exhibit 93 was marked for identification  
12 by the court reporter and is attached hereto.)

13 (Video Clip Played.)

14 "I have a Master's prepared person, just got  
15 out of her -- her internship, who told me how you're 05:05:48  
16 supposed to treat transgender people, and I was just  
17 astounded.

18 "I gave a seminar two years ago to residents  
19 who told me -- residents in psychiatry -- who told me  
20 how trans people ought to be treated. 05:06:05

21 "See, they had a chain in trust. Somebody  
22 taught them, and they believe it, the passion, they  
23 believe it. They have the zeal of the new -- of the  
24 convert to being a psychiatrist or being a counselor,  
25 whatever it is. And -- and -- and when I give them 05:06:21

Page 263



1 facts, they think I'm an outlier or they think I'm an  
2 old fuddy-duddy, there's something wrong with me. They  
3 don't believe me.

4 "Because the truth is that trans is normal,  
5 you see, and -- and that they can have highly 05:06:33  
6 successful lives, just like anybody else.

7 "And it's not based on experience. It's  
8 certainly not based on any scientific scrutiny, you  
9 see.

10 "And so what I'm really saying is that so many 05:06:46  
11 of the doctors just practice how they've been taught to  
12 practice. They -- they -- we -- we -- none of us have  
13 the brain power -- we take care of so many different  
14 things, we can't be experts in -- in -- in the original  
15 train of -- that chain of trust at all, you see. 05:07:05

16 "So of course we oversimplify everything.

17 "And, you know, there -- we rely on -- on a  
18 few skeptics like -- like the three of us."

19 BY MS. HARTNETT:

20 Q Dr. Levine, was that clip of you speaking on 05:07:22  
21 the podcast earlier this year?

22 A It is.

23 Q Was that your truthful statements?

24 MR. TRYON: Objection.

25 ///

1 BY MS. HARTNETT:

2 Q Sorry?

3 A I said --

4 Q I --

5 A -- those things that you heard on the podcast, 05:07:44  
6 yes.

7 Q And were they your truthful statements?

8 A Yes.

9 MS. HARTNETT: Okay. Could you play  
10 Exhibit 94, please. 05:07:53

11 (Exhibit 94 was marked for identification  
12 by the court reporter and is attached hereto.)

13 (Video Clip Played.)

14 "And then three years later, there was the six  
15 standards of care that was almost word for word for 05:07:59  
16 what our group did except for one letter was necessary.  
17 That is, he wanted to make it easier to get  
18 transgender."

19 BY MS. HARTNETT:

20 Q Dr. Levine, was that you speaking on the 05:08:15  
21 podcast earlier this year?

22 A Yes. And it's my truthful statement.

23 Q Thank you. You used the term "get  
24 transgender" on that clip. I was just wondering what  
25 you mean by that. 05:08:27

Page 265

1           A    I think that was referring to hormones, access  
2   to hormones.

3           We used to have a standard that two  
4   independent individuals or one group committee were  
5   required to write a recommendation for hormones, and           05:08:44  
6   Dr. Richard Green, who was the head of the organization  
7   at the time, didn't like that at all. He was a strong  
8   advocate of immediate care. And he told me so, he  
9   didn't like it. And -- and he reconstituted --  
10   accepted the fifth standards of care, and he formed a       05:09:05  
11   new committee with the -- you know, with the charge to  
12   get rid of that criteria for hormones.

13          Q    Do you typically use the term "get  
14   transgender"?

15          A    No. This was a spontaneous conversation. I       05:09:24  
16   don't -- it's a funny phrase. I don't know. It came  
17   out of my mouth. I don't know why. That's --

18          Q    Okay.

19          A    -- not my usual language.

20                But again, this was not a paper I was           05:09:33  
21   delivering that I, you know, worked on. This is  
22   something that happened rather spontaneously.

23          Q    I understand.

24                MS. HARTNETT: Could you please play

25   Exhibit 95.   05:09:49

1 (Exhibit 95 was marked for identification  
2 by the court reporter and is attached hereto.)  
3 (Video Clip Played.)  
4 "I think it's time for a re-examination of the  
5 wisdom of affirmative care. I'm not saying affirmative 05:09:55  
6 care doesn't help some people, but I'm not so sure how  
7 many people it harms."  
8 BY MS. HARTNETT:  
9 Q Dr. Levine, was that your truthful statement  
10 on the podcast earlier this year? 05:10:09  
11 A It --  
12 MR. TRYON: Same objection as before.  
13 Thank you.  
14 You may answer.  
15 THE WITNESS: I -- it is my true statement. 05:10:18  
16 I'm still not sure what percentage of people  
17 are ultimately harmed and how to measure those harms  
18 and when to measure those harms.  
19 MS. HARTNETT: Thank you.  
20 Could you play tab -- sorry -- Exhibit 96, 05:10:33  
21 please.  
22 (Exhibit 96 was marked for identification  
23 by the court reporter and is attached hereto.)  
24 (Video Clip Played.)  
25 "The problem is that we do not have rigorous 05:10:38

Page 267

1 follow-up studies of people who made the transition."

2 BY MS. HARTNETT:

3 Q Dr. Levine, is that your truthful statement  
4 made earlier this year?

5 MR. TRYON: Objection. 05:11:00

6 THE WITNESS: Yes.

7 MR. TRYON: I just want to place on the record  
8 evidence rule 106. Thank you.

9 Go ahead and answer.

10 BY MS. HARTNETT: 05:11:05

11 Q Dr. Levine, do you agree that there is not  
12 rigorous follow-up studies of people who have made the  
13 transition?

14 A Yes. I believe I testimony -- I testified to  
15 that earlier today. 05:11:24

16 Q And for all of these statements that I've  
17 asked you about, do you stand by those statements,  
18 sitting here today?

19 A Number one, I have said those things, and I  
20 believe them to be essentially correct today, yes. 05:11:36

21 Q And, thank you, I'm asking only to -- in light  
22 of the objection, not to repeat my questions to you.

23 MS. HARTNETT: Could you please play  
24 Exhibit 97.

25 (Exhibit 97 was marked for identification 05:11:48

Page 268

1 by the court reporter and is attached hereto.)

2 (Video Clip Played.)

3 "The people who come to me who are depressed,  
4 you know, those -- those -- after transition, those are

5 just anecdotal reports. I have no idea what the -- 05:12:00  
6 what the denominator is, you see."

7 BY MS. HARTNETT:

8 Q Dr. Levine, do you agree with the statement  
9 that was just played?

10 A Yes. 05:12:10

11 MS. HARTNETT: Could you please play  
12 Exhibit 98.

13 (Exhibit 98 was marked for identification  
14 by the court reporter and is attached hereto.)

15 MR. TRYON: Counsel, before you play it -- 05:12:19

16 MS. HARTNETT: Yes.

17 MR. TRYON: Counsel, will you just agree to  
18 give me a standing objection to these excerpts?

19 MS. HARTNETT: Yes.

20 MR. TRYON: Thank you. 05:12:28

21 (Video Clip Played.)

22 "And -- and because we don't know, because we  
23 don't know, I think we have to say why do we have all  
24 this enthusiasm, why do we have all this chain of trust  
25 passion that this is the best treatment. We don't know 05:12:46

Page 269

1 is the best treatment, you see."

2 BY MS. HARTNETT:

3 Q Dr. Levine, do you agree with that statement  
4 that you made earlier this year?

5 A I do. 05:12:58

6 MS. HARTNETT: Could you please play  
7 Exhibit 99.

8 (Exhibit 99 was marked for identification  
9 by the court reporter and is attached hereto.)

10 (Video Clip Played.) 05:13:05

11 "Now, I want to quickly say that while I'm an

12 advocate of someone who thinks or wants to be or

13 considers themselves a transgendered person, I think

14 they ought to have a psychotherapeutic approach before

15 they make any -- any life-changing decisions, but I 05:13:22

16 admit that I have no follow-up. This is not on the

17 basis of randomized control study. I am in the same

18 difficult position that the affirmative care doctors

19 are in, only I have more faith based upon a hundred

20 years of doing psychotherapy as a tradition, you see, 05:13:42

21 and they only have a few years, with no follow-up."

22 BY MS. HARTNETT:

23 Q Dr. Levine, is that your truthful statement?

24 A Yes.

25 MS. HARTNETT: Could you please play 05:14:02

Page 270

1 Exhibit 100.

2 (Exhibit 100 was marked for identification  
3 by the court reporter and is attached hereto.)

4 (Video Clip Played.)

5 "So -- so what I'm saying is that in the early 05:14:05  
6 studies, the death rates from cancer and cardiovascular  
7 disease and -- and accidents were -- were elevated and  
8 what -- and what that really means is that the  
9 lifestyle things predispose them to physical diseases.

10 "So, you know, if you're a parent, you -- 05:14:27  
11 you -- you want to die -- you want to die before your  
12 children, you see.

13 "So for many -- for many of these kids,  
14 they're going to be sick.

15 "And I just saw a slide of the famous -- 05:14:41  
16 Jazz Jennings. Do you know that name?

17 Female: Yeah.

18 "Apparently Jazz Jennings was a very thin,  
19 very attractive person when she had surgery, and in the  
20 postoperative time, she's now grossly obese. She is -- 05:14:58  
21 I saw a picture of her. She is grossly obese.

22 "So, you know, this is one of the -- this is  
23 one of the things that never gets talked about, what  
24 are the physical manifestations, what are the  
25 psychological manifestations, what are the outcomes." 05:15:13

Page 271



1 BY MS. HARTNETT:

2 Q Dr. Levine, is that your truthful statement?

3 A Yes.

4 Q Is it your contention that Jazz Jennings is  
5 grossly obese because she had gender confirmation 05:15:29  
6 surgery?

7 A No. She became grossly obese after gender  
8 confirmation surgery. In addition, she had -- she had  
9 other problems as well, I think.

10 I only know that because Jazz Jennings is a 05:15:50  
11 public, you know, celebrity, so to speak, and people  
12 talk about her and people showed me pictures of her.

13 So I've never -- that's -- that's what I know.

14 Q But you've never met Jazz Jennings; correct?

15 A I have never met Jazz Jennings. 05:16:09

16 MS. HARTNETT: Could you play Exhibit 101,  
17 please.

18 (Exhibit 101 was marked for identification  
19 by the court reporter and is attached hereto.)

20 (Video Clip Played.) 05:16:19

21 "And the -- the affirmative care doctors like  
22 to blame all these comorbidities and the shortened  
23 lifespan on minority stress, and you would -- I  
24 think -- I think we recognize that it is stressful to  
25 be -- to belong to a sexual minority, but -- but 05:16:32

Page 272

1 children who are cross-gender identified, who have  
2 separation anxiety and depression and so forth, they're  
3 not -- they're not having minority stress.

4 "And -- and the kids who -- you know, if  
5 you -- if you walk in -- if you walk in and see your 05:16:50  
6 postpartum depressed mom hanging from the rafters and  
7 then you decide three weeks later that you're going to  
8 change your gender, this is not minority stress."

9 BY MS. HARTNETT:

10 Q Dr. Levine, is that your truthful statement? 05:17:07

11 A Yes.

12 Q Are you aware of any example of an actual kid  
13 who walked in and saw their postpartum depressed mom  
14 hanging from the rafters and three weeks later decided  
15 to change gender? 05:17:22

16 A Absolutely.

17 Q Can you tell me what -- where is that example?

18 A I think that case was presented to me.

19 Q By whom?

20 A One of my staff. Or it was presented to me, 05:17:33  
21 you know, by somebody else.

22 Occasionally, I supervise other people.

23 But that came -- that -- that came from a  
24 recent -- a recent January 20th case history that I  
25 heard. 05:17:53

Page 273

1           It -- it has to do, you see, with not taking a  
2     history, giving people, very quickly, affirmative care  
3     and not appreciating the forces that might have shaped  
4     this -- that -- that may be very -- that may play out  
5     and may -- very difficult to have a happy, successful     05:18:15  
6     life as a trans person.

7           So I -- I can't give you the -- I can't tell  
8     you at the moment who told me that, but I can tell you  
9     I am not telling -- I am telling the truth. This is  
10    what I recently heard prior --                             05:18:34

11          Q     Was that as a -- sorry.

12          A     Pardon me.

13          Q     Was that -- was that an anecdote that came to  
14     you from somebody in your clinic?

15          A     As I said before, it might have been someone     05:18:43  
16     in my clinic; it might have been some other  
17     professional who talked to me about that.

18          Q     Do you know if the person at issue, the --  
19     the -- that was seeking a transition, whether they had  
20     any signs of gender dysphoria prior to the mom hanging     05:18:58  
21     from the rafters?

22          A     I think the implication was that they hadn't,  
23     but I don't remember enough details to -- I couldn't  
24     tell you the case history. That's the aspect of the  
25     case history that I recall.                             05:19:18

1 Q Thank you.

2 MS. HARTNETT: Can you play Exhibit 102,  
3 please.

4 (Exhibit 102 was marked for identification  
5 by the court reporter and is attached hereto.) 05:19:26

6 (Video Clip Played.)

7 "Lots of girls have temporary eating  
8 disorders, and some of them end up overcoming it, but  
9 they overcome it sometimes by becoming vegetarians or  
10 vegans. So it's okay, and it's much better. It's much 05:19:42  
11 better than having an eating disorder."

12 BY MS. HARTNETT:

13 Q Dr. Levine, was that your truthful statement?

14 A Yes.

15 Q What point were you trying to make by drawing 05:19:59  
16 an analogy to eating disorders and vegetarians and  
17 vegans?

18 A I think you would have to play for me what  
19 preceded that, but off the top of my head today, two  
20 months after I made that statement, more than two 05:20:14  
21 months after I made that statement, I was probably  
22 making reference to the fact that among adolescent  
23 girls who declare themselves to be trans boys, a large  
24 percentage of them have a pre- -- a predeclaration  
25 eating disorder, that this is part of the -- the 05:20:35

Page 275

1 psycho- -- the -- if we can agree that an eating  
2 disorder is a true problem and not just a dietary of  
3 something or other, the -- this evidence of the  
4 psychopathology that precedes transgender  
5 identification, the crystallization of a trans 05:20:59  
6 identification, eating disorder is just another way of  
7 self-harm where -- where one cannot live comfortably in  
8 the self as it is developing.

9 So that's probably what I was making reference  
10 to, the pre-crystallization of a transgender, the 05:21:18  
11 problems that are some- -- that are often seen in girls  
12 prior to their coming out as a trans boy.

13 Q Is it your view that you could correct the  
14 eating disorder and the person may stop identifying as  
15 transgender? 05:21:38

16 A Well, I think most eating dis- -- what I was  
17 saying -- I think you misunderstood -- is the -- the  
18 prelude to the eating disorder was transgender. I will  
19 say if you could help the person understand the  
20 motivation for the eating disorder and help her to come 05:22:00  
21 to grips with what she's doing is harmful to herself in  
22 the short and in the long run, then it wouldn't -- it  
23 may prevent -- it may help her to find another  
24 solution, for example, becoming a vegan or -- that  
25 would be a benign -- a less -- less problematic 05:22:25

Page 276

1 solution than having to become transgender, forget her  
2 eating disorder and focus on something else in a way  
3 that dominates her life.

4 So you -- you dominate your life by thinking  
5 that you're too fat when you're 93 pounds, and now 05:22:43  
6 you're domi- -- you give that up, and then you dominate  
7 your life because you're really a boy trapped in a  
8 girl's body and --

9 So I'm telling you, as a psychiatrist, life is  
10 complicated and histories are complicated and our 05:22:57  
11 ability to predict things is not very good, and I just  
12 want us to rely on science, as -- whatever the  
13 limitations of sciences are, I want to rely on science  
14 and not something shorter than science, you know,  
15 fervent, passionate beliefs, whatever. 05:23:19

16 Q So in that instance -- I'm just trying to make  
17 sure I understand -- your -- the idea would be that  
18 it's better to end up being vegan than transgender?

19 A If -- if you put it in that way, if you reduce  
20 everything to that simplicity, I guess the answer is it 05:23:35  
21 would be better to have a -- that would be a better  
22 supplementation of your original concerns about  
23 yourself and your body and the sexual meaning of your  
24 body than it is to repudiate your femininity entirely  
25 and try to remove your breasts surgically and take 05:23:56

1 hormones and so forth, yes.

2 MS. HARTNETT: Could you play Exhibit 103,  
3 please.

4 (Exhibit 103 was marked for identification  
5 by the court reporter and is attached hereto.) 05:24:04

6 (Video Clip Played.)

7 "It's your current sexual identity --

8 Female: Yeah.

9 -- "you see. I mean, I'm sure I've had  
10 identities -- I used to be a stamp collector, you know. 05:24:15  
11 I had an identity as a stamp collector. And I don't  
12 collect stamps anymore."

13 BY MS. HARTNETT:

14 Q Dr. Levine, are those your truthful  
15 statements? 05:24:28

16 A I was a stamp collector.

17 Q I was a baseball card collector.

18 Is being transgender like being a stamp  
19 collector?

20 A No. 05:24:38

21 MS. HARTNETT: Could you play tab --  
22 Exhibit 104, please.

23 (Exhibit 104 was marked for identification  
24 by the court reporter and is attached hereto.)

25 (Video Clip Played.) 05:24:55

Page 278

1 "I think the doctor's responsibility is to  
2 diagnose this, understand the factors that is pushing  
3 the child in that direction and the family in that  
4 direction and to inform what -- the parents and the  
5 child of what is known and what is not known and what 05:25:10  
6 the alternative treatments are, and the parents and the  
7 child make the decision, not the doctor. The doctor  
8 does not have the data to make the decision."

9 BY MS. HARTNETT:

10 Q Dr. Levine, is that your truthful statements? 05:25:28

11 A That is, although I'm embarrassed, but I used  
12 the wrong -- I should have said "are" and not "is" in  
13 the first sentence.

14 Q I think I just did the same thing.

15 I have one more excerpt to play. 05:25:42

16 MS. HARTNETT: Could you play Exhibit 105,  
17 please.

18 (Exhibit 105 was marked for identification  
19 by the court reporter and is attached hereto.)

20 (Video Clip Played.) 05:25:48

21 "So if I'm an expert in something, it's a very  
22 narrow topic I'm an expert in. Even though I'm a  
23 doctor and you -- somebody may think, well, he's a  
24 doctor; right? But the doctor doesn't know much about  
25 most things. 05:26:01

Page 279



1 "And -- and there is the wisdom, I think, is  
2 the difference between demagoguery, which I think many  
3 affirmative care doctors are demagogues, and experts,  
4 many of whom are just uneasy about what is not known."

5 BY MS. HARTNETT:

05:26:23

6 Q Dr. Levine, were these your truthful  
7 statements from earlier this year?

8 A Yes.

9 Q Do you consider yourself to be a demagogue or  
10 an expert?

05:26:36

11 A I consider myself, on this issue of the  
12 scientific basis of -- of trans delivery -- care  
13 delivery, to be an expert in this very narrow field  
14 because my definition of an expert, knows the  
15 difference between what is known and what is not known, 05:26:53  
16 you see.

17 On many subjects that I have to work on every  
18 day as a psychiatrist, I -- I have -- I -- I'm not sure  
19 what -- the difference between what I know and what is  
20 known by more expert people in the field. 05:27:10

21 I seem to have enough to have credentials as a  
22 practicing doctor, but I'm not an expert in most things  
23 I take care of.

24 When it comes to the data about this matter of  
25 trans care, I feel I'm a relative expert, and I think I 05:27:28

Page 280

1 have more perspective and more basis for that  
2 perspective than many people who have been taught how  
3 to take care of transgender people.

4 Q Do you believe Dr. Adkins is a demagogue?

5 A I don't know Dr. Adkins well enough to -- to 05:27:49  
6 make that decision. I don't want to be insulting at  
7 all to my colleagues, but if -- if Dr. Adkins believes  
8 this is genetically determined and if she believes that  
9 it's fixed and if she believes she's helping and she  
10 has evidence that she's helping people live happy lives 05:28:11  
11 for the next 40 years, I believe she is much more  
12 closer to my definition of a demagogue than, say, a  
13 person who can't distinguish between what she knows and  
14 what is known versus an expert.

15 But I don't want to pass judgment on her 05:28:27  
16 because, you know, I've just read her report, that's  
17 all.

18 Q How about Dr. Safer, would you have the same  
19 view there, that -- do you believe he's a demagogue, or  
20 you wouldn't want to pass judgment? 05:28:39

21 A You know, one of the ethical principles of  
22 being a doctor is to speak respectfully of one's  
23 colleagues.

24 I -- I would say, I just want to repeat, that  
25 most practicing doctors have a belief system that 05:28:58

Page 281

1       they're working on the side of angels, and that's a  
2       different set of ideas than what science has already  
3       demonstrated.

4               So to the extent that people believe,  
5       passionately believe, that what they are doing is               05:29:10  
6       ensuring a -- a -- a productive, successful,  
7       asymptomatic, fulfilling life and there's no evidence  
8       for it, well, I think they're not -- they shouldn't be  
9       certain about that.

10              And they're closer to an ordinary physician or       05:29:30  
11       a demagogue than they are to an expert.

12              Q     Thank you.    Could you just -- I have a --  
13       hopefully, a couple of final questions about your  
14       expert report.

15              Could you pull that back up?   That was               05:29:44  
16       Exhibit 87.

17              MR. BROOKS:   Coming, coming.

18       BY MS. HARTNETT:

19              Q     And I'm going to be just going to  
20       paragraph 81.                               05:29:54

21              MR. BROOKS:   Which is on.

22              MS. HARTNETT:   It's on -- take your time, but  
23       page 31, paragraph 81.

24              MR. BROOKS:   What heading are we under here?

25              MS. HARTNETT:   You are under --               05:30:10

1 MR. BROOKS: I see it. I see the heading at  
2 the top of page 30.

3 Is that the right heading? Am I missing  
4 anything --

5 MS. HARTNETT: Correct. 05:30:23

6 MR. BROOKS: -- or is that --  
7 Under "Opinions and practices vary widely..."  
8 Okay.

9 And then you said paragraph 81?

10 MS. HARTNETT: Right. And this is a paragraph 05:30:29  
11 about -- Dr. Levine is describing a Lichenstein  
12 article; is that correct?

13 MR. BROOKS: Let me just say, Dr. Levine, if  
14 you want to look at any paragraphs between the heading  
15 and this one, for context, you should feel free to, or 05:30:46  
16 if not -- if you don't feel the need, then you don't  
17 need to.

18 THE WITNESS: Okay.

19 BY MS. HARTNETT:

20 Q So this paragraph is talking about, in your 05:31:09  
21 words, the "loose standards" at Dr. Safer's clinics at  
22 Mount Sinai in Columbia; correct?

23 A Yes.

24 Q And do you say that he's -- I'm just reading  
25 from the first sentence, but you a say at least one 05:31:22

Page 283

1 prominent clinic, quote, is quite openly admitting  
2 patients for even surgical transition who are not  
3 eligible under the criteria set out in WPATH's  
4 Standards of Care.

5 Do you see that? 05:31:36

6 A Yes. The last sentence, right.

7 Q Is it your understanding that patients were  
8 receiving care there without meeting the WPATH  
9 standards?

10 A WPATH standards are just one set of standards, 05:31:53  
11 and I guess Dr. Safer has a different set of standards.

12 I don't think that WPATH needs to be followed,  
13 you know. I don't think they're -- they are in fact  
14 the standards of care. They are just an organization  
15 that is providing some guidelines, which they call 05:32:19  
16 standards of care, but aren't true standards of care.  
17 They're just guidelines from a professional  
18 organization that is -- that is an advocacy  
19 organization for -- for the treatment -- for  
20 affirmative treatment. 05:32:36

21 Q But are you aware that Mount Sinai went  
22 through the process of having those people satisfy the  
23 WPATH standards before they had surgery notwithstanding  
24 that they would have also met the other standards set  
25 forth by Sinai? 05:32:47

Page 284

1 MR. BROOKS: Objection.

2 THE WITNESS: I'm -- I'm not deeply involved  
3 in the process of how Dr. Safer has done his work.  
4 This would be not an area of my expertise about --  
5 about his criteria. 05:33:04

6 BY MS. HARTNETT:

7 Q I guess my question for you is whether you  
8 know, sitting here today, whether in fact Dr. Safer's  
9 center allowed patients to have surgery under what you  
10 call the "loose standards" without satisfying WPATH. 05:33:17

11 A Well, it was my understanding from the quoted  
12 study that -- that he was providing -- or giving  
13 permission for surgical care for people who may not  
14 have met the few criteria that -- that we have -- had  
15 organized in 2000- -- in, you know, the seventh 05:33:44  
16 edition.

17 Q Did you read the Lichtenstein article before  
18 citing it here?

19 A I must have read it, but it's probably one of  
20 hundreds of articles, and right now, I can't recall the 05:33:54  
21 details.

22 Q Thank you.

23 MS. HARTNETT: Could I take a -- go off -- I  
24 think I'm almost -- or -- done, if not done.

25 But could we go off the record briefly for me 05:34:06

Page 285

1 to collect my nets and then hopefully we'll be done?

2 THE VIDEOGRAPHER: We are off the record at

3 5:34 p.m.

4 (Recess.)

5 THE VIDEOGRAPHER: We are on the record at 05:44:53

6 5:45 p.m.

7 MS. HARTNETT: Thank you, Dr. Levine. I have

8 no further questions, but reserve the right to any

9 recross if there's further questioning of you.

10 THE WITNESS: You're welcome. 05:45:12

11 MS. HARTNETT: Thank you.

12 MR. BROOKS: Speaking for the -- Roger Brooks,

13 speaking for the intervenor, I have no questions for

14 the witness.

15 MR. TRYON: This is Dave Tryon on behalf of 05:45:20

16 the State of West Virginia.

17 Dr. Levine, thank you for your time.

18 I have no questions.

19 MS. MORGAN: This is Kelly Morgan on behalf of

20 the West Virginia Board of Education and Superintendent 05:45:29

21 Burch. I have no questions. Thank you.

22 MS. DENIKER: Dr. Levine, this is Susan

23 Deniker, counsel for defendants Harrison County Board

24 of Education and Superintendent Stutler, and I have no

25 questions for you.

1 Thank you for your time.

2 THE WITNESS: You're welcome.

3 MS. ROGERS: Dr. Levine, this is Shannon  
4 Rogers on behalf of the West Virginia Secondary School  
5 Activities Commission. I have no questions either. 05:45:53

6 Thank you.

7 THE WITNESS: You're welcome.

8 MS. HARTNETT: Dr. Levine, thank you for your  
9 time.

10 THE VIDEOGRAPHER: Thank you. 05:46:00

11 We are off the record at 5:46 p.m., and this  
12 concludes today's testimony given by Stephen Levine,  
13 Dr. -- Dr. Stephen Levine.

14 The total number of media units was seven and  
15 will be retained by Veritext Legal Solutions. 05:46:16

16 Thank you.

17 (TIME NOTED: 5:46 p.m.)

18

19

20

21

22

23

24

25



1  
2  
3  
4 I, STEPHEN LEVINE, do hereby declare under  
5 penalty of perjury that I have read the foregoing  
6 transcript; that I have made any corrections as appear  
7 noted, in ink, initialed by me, or attached hereto;  
8 that my testimony as contained herein, as corrected, is  
9 true and correct.

10 EXECUTED this \_\_\_\_ day of \_\_\_\_\_,  
11 20\_\_\_\_, at \_\_\_\_\_, \_\_\_\_\_.  
(City) (State)

12  
13  
14  
15 \_\_\_\_\_  
STEPHEN LEVINE

16 VOLUME I  
17  
18  
19  
20  
21  
22  
23  
24  
25

1 I, the undersigned, a Certified Shorthand  
2 Reporter of the State of California, do hereby certify:

3 That the foregoing proceedings were taken  
4 before me at the time and place herein set forth; that  
5 any witnesses in the foregoing proceedings, prior to  
6 testifying, were placed under oath; that a record of  
7 the proceedings was made by me using machine shorthand  
8 which was thereafter transcribed under my direction;  
9 further, that the foregoing is an accurate  
10 transcription thereof.

11 I further certify that I am neither financially  
12 interested in the action nor a relative or employee of  
13 any attorney of any of the parties.

14 IN WITNESS WHEREOF, I have this date subscribed  
15 my name.

16  
17 Dated: April 15, 2022

18  
19   
20

ALEXIS KAGAY

21 CSR NO. 13795  
22  
23  
24  
25

[&amp; - 30]

<b>&amp;</b>	186:14 198:3	<b>1999</b> 97:11,18	<b>20s</b> 172:14 176:8
<b>&amp;</b> 5:17 6:5 13:1	220:7,12	<b>1:11</b> 155:21	<b>20th</b> 273:24
<b>0</b>	<b>1411</b> 6:19 7:8	<b>1:30</b> 58:20	<b>217</b> 8:19
<b>00316</b> 1:8 2:8	<b>146</b> 77:8	<b>2</b>	<b>22</b> 70:4
11:16 65:12	<b>147</b> 76:6,11,11,25	<b>2</b> 63:25 64:1 91:11	<b>23rd</b> 70:4
<b>02116-3740</b> 3:15	101:16	92:4 164:8 181:3	<b>24th</b> 90:13
<b>1</b>	<b>14th</b> 3:14	<b>20</b> 71:6 114:16,17	<b>25</b> 71:7,7 194:14
<b>1</b> 1:25 11:9 78:19	<b>15</b> 128:4 147:4	135:18 143:15,19	<b>25301</b> 5:22
181:3	186:14 195:25	172:16 174:11	<b>25301-3088</b> 6:21
<b>10</b> 74:24 172:16	197:24 289:17	176:21 179:11	7:10
<b>100</b> 9:19 271:1,2	<b>151</b> 76:3,3 77:4,7	196:8,12,13	<b>25305-0220</b> 5:9
<b>1000</b> 4:20	<b>16</b> 60:6 123:18	197:15 216:5	<b>256</b> 8:22
<b>10005-3919</b> 4:10	139:1 187:22	234:22 288:11	<b>258</b> 8:24
<b>101</b> 9:21 272:16,18	201:10,22,23	<b>200</b> 6:20 7:9 99:7	<b>260</b> 9:1
<b>102</b> 9:23 275:2,4	<b>17</b> 91:10 166:18	99:11 106:6	<b>261</b> 9:3
<b>103</b> 9:25 278:2,4	<b>17th</b> 140:18	<b>2000</b> 285:15	<b>263</b> 9:5
<b>104</b> 10:2 278:22,23	<b>18</b> 140:3,12,20,21	<b>2002</b> 177:10	<b>26330</b> 6:9
<b>105</b> 10:4 279:16,18	140:22 141:4	<b>2006</b> 168:22	<b>265</b> 9:7
<b>106</b> 268:8	176:3,10,11	<b>2008</b> 24:21 26:4	<b>267</b> 9:9,11
<b>10:13</b> 51:14	192:18 203:12	<b>2010s</b> 182:9	<b>268</b> 9:13
<b>10:23</b> 51:17	209:6 212:21,22	<b>2011</b> 182:5 190:12	<b>269</b> 9:15
<b>10th</b> 64:25	213:2	190:23 225:25	<b>270</b> 9:17
<b>11</b> 123:18 249:2,13	<b>18a</b> 192:20,23	<b>2015</b> 39:8 41:8,8	<b>271</b> 9:19
250:3,14	<b>18h</b> 212:24	<b>2017</b> 22:9 121:8	<b>272</b> 9:21
<b>112</b> 5:8	<b>18l</b> 194:21	<b>2018</b> 146:8 200:12	<b>275</b> 9:23
<b>11776</b> 289:20	<b>19</b> 4:9 88:3 103:1	<b>2019</b> 23:13 28:16	<b>278</b> 9:25 10:2
<b>11:49</b> 108:4	190:18 196:6,12	<b>202</b> 235:10,15,21	<b>279</b> 10:4
<b>12</b> 147:4 220:13	234:22 260:20	237:19 245:7	<b>289</b> 1:25
<b>120</b> 4:8	<b>1900s</b> 225:10,11	<b>2020</b> 22:5 37:6	<b>28th</b> 256:12,15
<b>12:01</b> 108:7	<b>1973</b> 108:24 110:1	133:17 218:6	<b>2:11</b> 155:24
<b>13</b> 36:7 171:7	257:6,12 258:1	<b>2021</b> 15:9 21:17	<b>2:21</b> 1:8 2:8 11:16
187:21 235:7	<b>1974</b> 102:22	22:1 37:5 64:25	65:12
<b>130</b> 156:11,11,13	<b>1976</b> 78:20	65:3 68:9,12	<b>3</b>
156:14	<b>1977</b> 89:10	140:18 165:1	<b>30</b> 1:20 2:24 11:1
<b>13795</b> 1:24 2:25	<b>1983</b> 109:22	167:12 239:22	172:16 173:17
289:21	<b>1984</b> 260:22	<b>2022</b> 1:20 2:24	174:5,6,8,10,12,24
<b>14</b> 8:6 132:2,3	<b>1988</b> 225:5	11:1,4 197:17,21	174:25 175:2
134:4 149:11	<b>1992</b> 88:3 89:1	245:22 256:12	176:20 177:12
150:7 151:17	<b>1993</b> 89:1 110:19	289:17	179:8,10 180:3
166:18 181:14	110:20 111:10,16	<b>203</b> 235:23 237:20	190:13 228:21
		243:14	257:12 283:2

**[30043 - accurate]**

<b>30043</b> 4:20 <b>304.933.8154</b> 6:10 <b>30s</b> 172:15 <b>30th</b> 11:4 <b>31</b> 282:23 <b>3293</b> 143:13 157:5 157:8 <b>35</b> 121:7,16 <b>37</b> 198:13,22 <b>38</b> 200:12,15 <b>3:21</b> 207:14 <b>3:36</b> 207:17	<b>5:45</b> 286:6 <b>5:46</b> 2:23 287:11 287:17	<b>9</b>	<b>aboard</b> 112:2 <b>absence</b> 191:21 <b>absent</b> 175:10 191:22,24 <b>absolutely</b> 248:20 273:16 <b>abuse</b> 120:19 160:10 170:5 <b>academic</b> 97:24 <b>academy</b> 146:7 147:18 148:6,7 <b>accept</b> 81:12 83:12 128:5 163:4 240:25 <b>acceptable</b> 194:11 206:3 <b>acceptance</b> 205:17 206:22 <b>accepted</b> 41:1,9 149:17 205:12,15 206:3 266:10 <b>accepts</b> 244:18 <b>access</b> 266:1 <b>accidental</b> 139:19 <b>accidentally</b> 201:18 <b>accidents</b> 271:7 <b>accommodation</b> 26:25 <b>accommodations</b> 23:19 24:24 <b>accompanying</b> 161:3 <b>accomplished</b> 258:20 <b>account</b> 39:19 259:6,7 <b>accounting</b> 192:1 <b>accurate</b> 77:7 135:5 259:6 289:9
	<b>6</b>	<b>9</b> 197:19 <b>90</b> 8:24 74:20 258:9,11 <b>900</b> 74:17 <b>90s</b> 98:1 182:9 <b>91</b> 9:1 260:13,14 <b>92</b> 9:3 261:20,21 <b>93</b> 9:5 262:21 263:10,11 277:5 <b>94</b> 9:7 265:10,11 <b>95</b> 9:9 247:5,16 248:16 266:25 267:1 <b>96</b> 9:11 172:18 267:20,22 <b>97</b> 9:13 268:24,25 <b>98</b> 9:15 269:12,13 <b>99</b> 9:17 270:7,8 <b>9:09</b> 2:23 11:2,4	
	<b>7</b>	<b>a</b>	
<b>4</b> 92:24 143:24 165:18 202:21 <b>40</b> 25:2,3,15 258:8 258:9 281:11 <b>400</b> 6:8 <b>41</b> 260:12 <b>49</b> 203:7,13 204:13 <b>4:38</b> 254:21 <b>4:55</b> 254:24	<b>6</b> 137:17,19 <b>60</b> 101:19 256:10 <b>600</b> 5:21 <b>60s</b> 182:8 <b>61</b> 218:13,15,22,23 219:3 <b>617.937.2305</b> 3:16 <b>681.313.4570</b> 5:10 <b>69</b> 8:16 235:11,14	<b>a.m.</b> 2:23 11:2,2,4 51:14,17 108:4 <b>aasec</b> 98:4 <b>aasect</b> 98:4 <b>abandonment</b> 261:5,12 <b>abarr</b> 3:19 <b>ability</b> 20:8,13 25:7,7 74:5 234:11,15 238:6 250:3 277:11 <b>able</b> 17:8 21:7 55:4 94:17 95:23 97:15 132:10 153:4 165:20 207:21 221:15 222:13 245:4 248:9 257:7	
<b>4</b> 92:24 143:24 165:18 202:21 <b>40</b> 25:2,3,15 258:8 258:9 281:11 <b>400</b> 6:8 <b>41</b> 260:12 <b>49</b> 203:7,13 204:13 <b>4:38</b> 254:21 <b>4:55</b> 254:24	<b>7</b> 167:19,25 170:16 212:25 213:8 <b>70</b> 70:8 173:6,9 174:1 188:19 <b>70s</b> 102:12 182:9 <b>75</b> 79:22 <b>7:00</b> 58:20 <b>7th</b> 113:5	<b>a</b>	
<b>5</b>	<b>8</b>	<b>a</b>	
<b>5</b> 108:15,17,21 110:15 164:8,10 164:21 165:19 <b>50</b> 87:13 123:14 143:16,20,25 144:7,15,19 156:5 173:6 174:1 177:19 188:19 205:1 244:9 <b>500</b> 3:13 5:20 <b>51</b> 8:11 73:10,13 73:19 75:11 <b>5122884</b> 1:24 <b>53</b> 202:13,17,25 <b>56</b> 207:6 <b>5:34</b> 286:3	<b>8</b> 167:19 168:4 170:16 194:22 <b>80</b> 175:7 <b>80s</b> 182:9 <b>81</b> 75:18 282:20,23 283:9 <b>83</b> 260:20 <b>86</b> 8:11 50:25 51:2 63:4 76:7 164:18 165:25 <b>87</b> 8:16 69:20,24 70:2 282:16 <b>88</b> 8:19 217:22,25 220:24,25 <b>89</b> 8:22 256:20,21	<b>a</b>	

**[accurately - aged]**

<b>accurately</b> 47:5 251:15 <b>accused</b> 200:22 261:24 <b>achieve</b> 100:18 <b>achieving</b> 117:5 <b>acknowledge</b> 189:7 <b>aclu</b> 12:24 <b>acquired</b> 139:14 <b>acronym</b> 98:23,25 <b>acronyms</b> 147:24 <b>act</b> 233:17,17 <b>action</b> 11:20 289:12 <b>actions</b> 174:24 <b>active</b> 99:21 236:16 <b>actively</b> 105:24 <b>activities</b> 1:11 2:11 6:14 7:3 13:8 54:12,13,17 85:20 98:11 287:5 <b>activity</b> 95:2 <b>actual</b> 86:12 123:4 165:5 166:3 273:12 <b>ad</b> 45:21 <b>adaptation</b> 23:8 29:3,25 <b>adapting</b> 199:17 <b>adaptive</b> 160:12 <b>add</b> 160:7 <b>added</b> 69:17 71:19 71:25 72:18 161:5 213:13 <b>addition</b> 14:11 272:8 <b>additional</b> 59:9 65:5 176:18	<b>address</b> 186:17 <b>addressing</b> 118:21 <b>adds</b> 95:15 <b>adequate</b> 116:11 119:14,16 155:16 <b>adf</b> 56:11 <b>adflegal.org</b> 4:21 4:22 <b>adheres</b> 255:10 <b>aditi</b> 197:22 <b>adjudi</b> 39:3 <b>adjudication</b> 67:21 <b>adkins</b> 61:8,13,20 61:23 62:3,7 73:1 125:22 126:11,14 171:9 173:3,7,12 173:24 174:23 175:15,23 176:1 187:19 188:11,23 281:4,5,7 <b>administered</b> 13:23 <b>administration</b> 213:9 <b>admission</b> 190:21 <b>admit</b> 270:16 <b>admitted</b> 258:25 <b>admitting</b> 284:1 <b>adolescence</b> 44:5 87:18 243:15 245:25 <b>adolescent</b> 46:3 79:10 80:23 83:14 83:22 84:2 85:1,3 87:11,17 90:25 91:6 99:19 113:16 127:13,19 142:17 146:14 195:10 223:10 240:1 275:22	<b>adolescents</b> 8:20 60:9 81:2 84:20 87:9 99:14 100:4 131:22 150:19 157:13 199:16 204:18,20 228:9 <b>adult</b> 79:18,22 80:23 82:13 86:3 132:9,21 133:23 146:15 172:17,24 172:24 176:4 236:9,16 239:15 <b>adulthood</b> 245:9 245:24 <b>adults</b> 54:3 60:9 84:21 129:16 131:22 160:21 172:25 173:1 181:18 189:18 236:10 258:19 <b>advance</b> 102:3 <b>advantage</b> 155:7 210:19 <b>advantages</b> 130:17 <b>adventures</b> 236:19 <b>adverse</b> 239:19 <b>adversities</b> 84:19 <b>advice</b> 114:7 122:14 <b>advise</b> 94:13 95:4 <b>advisors</b> 255:17 255:18,21 <b>advocacy</b> 284:18 <b>advocate</b> 244:16 266:8 270:12 <b>advocates</b> 133:10 144:23 160:25 179:15 200:22 226:3 230:1 <b>affect</b> 20:8,12 56:7 95:10 105:3	<b>affiliated</b> 52:8 122:2 255:22 <b>affiliation</b> 111:9 111:15,15 112:19 <b>affiliations</b> 11:23 <b>affirmation</b> 35:8 119:25 120:8,15 120:25 121:6 123:23,24 124:5 124:11,16 125:7 125:25 135:16 137:3 143:24 144:18 181:4,9 202:16,20 205:5 205:17 206:10 211:22,23 <b>affirmative</b> 46:24 105:8 114:20,21 115:10,22 116:1,5 116:7,16,21,24 118:6,16 119:2,10 133:6,8 135:15 186:4,8,12 204:8 204:10 205:2 206:1 243:6 267:5 267:5 270:18 272:21 274:2 280:3 284:20 <b>affirmed</b> 240:2 <b>affirming</b> 125:20 126:18,25 128:18 129:23 <b>afraid</b> 123:23 187:2 <b>african</b> 148:9 <b>afternoon</b> 58:15 58:16,19 235:5 <b>age</b> 36:7 91:9 139:1 217:4,4,4 <b>aged</b> 80:24,24
--	---	--	---

**[ages - appearances]**

<b>ages</b> 166:17	<b>allowing</b> 149:3	<b>anonymous</b> 201:5	239:5,11 240:3
<b>agnostic</b> 31:13,16	150:7,18 153:13	201:7	252:12 253:18
<b>ago</b> 56:4 60:6	157:12 162:20	<b>answer</b> 17:21,23	261:16 267:14
63:18 77:25 83:9	<b>allusion</b> 132:20	18:2,3,6,11,21	268:9 277:20
91:5,8 99:4,5	<b>alr</b> 111:7	23:18 24:3 29:21	<b>answered</b> 48:12
121:8 135:19	<b>alternative</b> 212:1	35:22 36:13 38:2	49:20 67:9,10,17
142:4 210:11	279:6	41:22 44:1,8,9	119:5,6 128:3,7
216:6 228:21	<b>althof</b> 111:3,5	45:6,18 48:12	148:18 154:22
257:20 263:18	<b>amazing</b> 98:14	49:23 50:14,15,18	187:4 221:14
<b>agree</b> 11:7 48:25	191:21,21	52:17 54:23 55:6	<b>answering</b> 27:20
70:8 115:21 136:9	<b>ambiguous</b> 27:15	55:9 57:13,15,17	85:14 95:17 239:2
136:15,17 169:4	150:12	58:23 59:6 60:13	<b>answers</b> 18:25
182:19 183:14	<b>america</b> 176:25	60:16,20 61:24	19:1 47:7 239:4
200:2,5 226:16	177:1 258:17	66:24 68:1 72:2,7	<b>anticipated</b> 152:9
232:17 241:7,20	<b>american</b> 89:22	72:8,9 78:3,9	<b>anxiety</b> 85:23
241:25 268:11	122:22 146:7	80:25 82:2,19	120:19 149:20
269:8,17 270:3	147:18 148:6,6	85:25 86:7 92:11	160:8 273:2
276:1	<b>americans</b> 148:10	93:22 94:4 95:23	<b>anxious</b> 233:9
<b>agreed</b> 14:15	<b>amount</b> 85:4	96:9 97:1,15	<b>anybody</b> 154:11
140:1	200:24	104:5 105:8 106:8	154:16 264:6
<b>agreement</b> 94:14	<b>analogy</b> 275:16	106:9,11,16,17	<b>anymore</b> 99:20
<b>agrees</b> 70:13	<b>analysis</b> 122:8	110:8 118:10	225:24 257:17
<b>ahead</b> 118:9	137:8	120:21 123:17,20	278:12
157:22 205:21	<b>anatomy</b> 189:2	124:20 125:11	<b>anyone's</b> 228:6
268:9	224:11 234:13	126:8,23 133:19	<b>anytime</b> 206:5
<b>akron</b> 113:6	<b>andrew</b> 3:7 12:7	133:20,21 134:16	<b>anyway</b> 237:7
<b>al</b> 146:8 190:14	<b>anecdotal</b> 131:7,8	136:23 137:13	<b>apa</b> 90:1
<b>alert</b> 20:10	135:17 137:10	141:19 148:5	<b>apologies</b> 224:23
<b>alexis</b> 1:23 2:24	204:15 242:6,11	150:4,22 151:2,11	<b>apologize</b> 92:23
11:19 289:20	242:12,13 243:3	152:11,21 153:4	<b>apparently</b> 21:9
<b>alienated</b> 238:10	243:22 244:8	155:11,13 158:5	97:12,14 193:18
<b>alienation</b> 239:20	269:5	159:18 163:25	271:18
<b>alienations</b> 239:11	<b>anecdote</b> 274:13	165:21 176:16	<b>appealed</b> 41:4
<b>alliance</b> 4:16	<b>angels</b> 282:1	184:13,14,18,25	<b>appear</b> 165:16
13:14 52:3,8,11,16	<b>angry</b> 230:19,19	185:6,7,11,25	288:6
52:25 53:19	259:2	186:23 187:3	<b>appearance</b> 11:25
<b>allow</b> 61:24 82:25	<b>angst</b> 126:2	188:24 189:14,14	35:1
128:5 151:19	<b>anguish</b> 222:20	191:20 192:17	<b>appearances</b> 3:1
<b>allowed</b> 35:18	229:12	194:17,18 195:17	4:1 5:1 6:1 7:1
151:3 159:5 285:9	<b>anne</b> 225:15	197:6 219:21	11:23
		232:15,16 238:23	

**[appeared - athletic]**

<b>appeared</b> 60:7 102:18 <b>appearing</b> 2:22 <b>appears</b> 64:24 <b>appendicitis</b> 131:14 <b>apple</b> 180:22 <b>apples</b> 180:17,18 <b>applied</b> 32:18 <b>applies</b> 145:22 157:5,8 <b>apply</b> 234:25 <b>appraisal</b> 31:10 47:11 92:19 93:7 93:12 107:14 <b>appreciate</b> 78:14 95:19 105:20 123:2 140:8 187:18 200:1 237:17 254:10 <b>appreciating</b> 274:3 <b>appreciative</b> 247:3 <b>approach</b> 100:3,3 173:3 186:20 188:17 189:25 190:7 203:20 208:6,11,24 211:23 212:15 234:2,3 270:14 <b>approaches</b> 212:1 <b>appropriate</b> 16:20 17:1 36:14 208:10 <b>approval</b> 68:16 <b>approximately</b> 71:6 86:23 87:6 87:12 <b>april</b> 113:5 289:17 <b>apt</b> 160:6 <b>archives</b> 60:5 236:7 237:4	260:19 <b>area</b> 32:14 114:15 114:17 131:21 152:7 161:21 165:9 166:10 167:13 168:16,22 203:8 285:4 <b>areas</b> 60:19 155:9 <b>arg</b> 30:3 <b>argue</b> 145:2 <b>arguing</b> 29:18 30:3 252:4 <b>argumentative</b> 240:24 251:25 <b>arguments</b> 69:9 <b>arizona</b> 41:2 44:3 44:14 46:3 <b>arm</b> 74:15 <b>armistead</b> 1:16 2:17 13:15 <b>aron</b> 62:19,20 <b>array</b> 25:25 26:23 <b>article</b> 60:6 76:3 76:14 104:23 105:2,7,9 109:17 121:9 200:17 211:18 212:9 236:7,22 237:2 283:12 285:17 <b>articles</b> 60:17 76:3 88:10 114:16 285:20 <b>articulate</b> 32:16 215:15 222:5 244:21 <b>articulated</b> 210:5 215:15 216:2 <b>arts</b> 148:12 <b>ascertained</b> 185:18	<b>ashamed</b> 231:20 <b>asians</b> 148:10 <b>aside</b> 43:2 44:21 <b>asked</b> 18:20 34:21 34:21,22 41:11 48:11 53:10 56:17 57:2 66:4,9,20 67:9,15,17,23 73:9 80:25 107:5 113:4 115:14,15 119:5 126:21 127:24 128:3 135:22 138:14 168:14 170:11 184:21 219:4,5 268:17 <b>asking</b> 17:15 39:24,25 49:16 50:9 66:13 67:14 70:10 82:4,6 86:12 97:17 108:14 109:4,12 119:11 120:9 128:8 138:16 141:17 152:10 155:6,15 164:6 165:14 181:7 184:12,15 185:1 185:12,24 201:25 208:4 218:20 231:18 251:21 259:10 260:9 261:16 268:21 <b>aspect</b> 151:10 189:6,6 215:10 274:24 <b>aspects</b> 30:24 121:23 157:25 214:14 215:23 217:8 223:22 252:24	<b>aspiration</b> 104:8 <b>aspirations</b> 208:17 262:5 <b>aspired</b> 145:4 <b>assert</b> 145:7 147:15 232:3 <b>asserted</b> 145:6 147:14,17 <b>asserting</b> 146:8,9 <b>assertions</b> 236:6 <b>assigned</b> 142:20 196:16 <b>assigning</b> 196:22 <b>associ</b> 102:24 <b>associated</b> 52:16 <b>association</b> 89:22 102:22 <b>associations</b> 147:23 <b>assume</b> 18:11 115:16 158:24 182:21 248:15 <b>assumed</b> 115:19 <b>assumes</b> 240:23 <b>assuming</b> 199:2 241:21 247:16 <b>assumption</b> 146:12 175:15,22 241:17 <b>assumptions</b> 241:15,21 <b>astounded</b> 263:17 <b>asymptomatic</b> 282:7 <b>athletes</b> 152:3 <b>athletic</b> 57:1 82:1 143:7 145:9 147:17,23 148:16 149:17 151:5 156:9,10,23 158:13
--	--	---	--



**[athletics - basis]**

<b>athletics</b> 21:7 42:14 146:11,17 146:17,23 149:15 149:15 151:5 170:22 <b>attached</b> 51:3 63:9 65:19 66:5 69:25 75:14 164:17 218:1 256:22 258:12 260:15 261:22 263:12 265:12 267:2,23 269:1,14 270:9 271:3 272:19 275:5 278:5,24 279:19 288:7 <b>attachment</b> 65:24 <b>attempt</b> 63:18 <b>attempts</b> 140:6 177:7 <b>attendant</b> 25:8,9 <b>attending</b> 11:5 <b>attention</b> 61:5 77:13 172:12 212:24 213:7 <b>attitude</b> 130:11 <b>attorney</b> 5:5,7,19 6:7,18 7:7 12:1 13:11 30:3,6 33:9 82:4 170:2 289:13 <b>attorneys</b> 3:12 4:7 4:19 14:7 29:18 57:6 94:22 168:18 <b>attracted</b> 233:12 <b>attractions</b> 233:8 236:13 <b>attractive</b> 271:19 <b>atypicality</b> 224:3,4 <b>audio</b> 11:6 256:7 <b>august</b> 113:5 140:22	<b>australia</b> 125:1 <b>australian</b> 104:16 <b>author</b> 135:19 200:22 <b>author's</b> 197:22 237:6 <b>authored</b> 228:11 <b>authorization</b> 210:24 <b>authors</b> 191:14 197:24 214:22 <b>authorship</b> 202:4 <b>autism</b> 122:12 <b>autogynephilia</b> 224:21,23 225:1,2 225:13,18,22 226:5,6,10,18 227:3,9,19 <b>autogynephilic</b> 225:7,19 227:11 227:15 <b>automatically</b> 162:10 <b>autonomy</b> 210:22 <b>available</b> 94:22 177:13 256:9 <b>avenue</b> 5:8 <b>avenues</b> 89:15 <b>average</b> 89:6 232:17,18 <b>avery</b> 168:23 <b>avoid</b> 27:21 <b>awarded</b> 169:13 <b>aware</b> 23:14 29:22 31:1,5,6 40:3 41:16,23 56:22,23 67:5,14 75:25 78:8,9 98:20 113:21 119:7 120:24 135:14 158:3,7,12 169:12	169:25 170:23 171:5 188:6,10,15 191:4 200:17,20 214:8 238:17 243:8,12 245:20 246:18,21 247:2 249:24 251:8 273:12 284:21 <b>awareness</b> 83:5 160:20 <b>awkward</b> 194:2 <b>ayad</b> 90:10,20 255:25 256:15 <b>b</b> <b>b</b> 8:12,16 15:2 64:8 197:23 202:15 237:6 <b>b.p.j.</b> 1:5 2:6 3:3 11:11 12:4 19:21 20:19 42:24 51:20 56:17 65:16 68:5 72:25 142:5,6,7,8 142:19 143:5 249:9 <b>back</b> 43:12 46:15 64:18 65:9 66:14 78:13 83:7 87:20 92:25 97:25 103:12 108:10 112:6 122:17,18 129:17 152:24 154:9 156:2 164:3 164:7 177:6 178:4 178:5,23 187:20 188:23 201:20 207:13 258:16 282:15 <b>background</b> 56:21 143:8 170:16 211:2	<b>backward</b> 212:19 <b>backyard</b> 257:15 <b>bad</b> 139:15,16 200:22 <b>bailey</b> 5:17 <b>baileywyant.com</b> 5:23 <b>balance</b> 74:4 <b>ballpark</b> 103:17 <b>ban</b> 251:18 <b>barr</b> 3:7 12:7,7 <b>barrett</b> 15:1 <b>barriers</b> 89:24 <b>base</b> 32:4 46:21 132:5 147:10,10 <b>baseball</b> 278:17 <b>based</b> 17:9 29:3 31:10 55:5,14 71:20 96:11 98:21 99:10 101:13,13 105:6 107:7 131:18 132:20 133:2 135:5 147:25 160:14 161:24 206:10 212:16 244:9 252:22,22 255:6 264:7,8 270:19 <b>basic</b> 17:19 <b>basically</b> 112:2 176:2 212:13 216:15 <b>basing</b> 175:14 <b>basis</b> 61:2 71:8,12 71:13 104:20 119:19 120:6,21 124:14,20,21 127:5 132:4,6 133:7 135:12 143:8,8 150:1 161:15,23 162:8
---	---	--	---



**[basis - body]**

167:1,4 173:23 174:20 175:22 176:16,17,18 205:16 206:16 207:4 213:16,21 213:24 236:6 237:17 243:21 245:19,25 246:1 246:14 248:9 255:12 270:17 280:12 281:1 <b>beck</b> 106:18,18 <b>becoming</b> 74:12 83:21 182:25 243:7 275:9 276:24 <b>bedroom</b> 121:18 <b>began</b> 102:12 112:10 168:22 207:2 214:21 216:3 <b>beginning</b> 2:22 11:25 25:10 43:20 72:14,22 75:19 128:25 164:4,15 168:15 205:1 215:14,16 225:5 239:20 257:23 <b>begins</b> 116:11 203:12 204:1 <b>behalf</b> 2:21 13:4,7 56:11 286:15,19 287:4 <b>behavior</b> 60:6 232:12 236:8 237:4 240:12 260:19 <b>behavioral</b> 84:11 120:20 171:21 229:4	<b>behaviors</b> 44:7 199:3 200:3,5,11 227:11 <b>beings</b> 161:25 162:6,7,16 200:8 <b>belabor</b> 205:3 254:4 <b>belief</b> 20:11 189:8 222:22 281:25 <b>beliefs</b> 173:22,22 189:21 206:2 277:15 <b>believe</b> 16:20 35:16 36:15 40:14 42:9 47:1 56:15 58:6 59:8,11 70:20 75:8 84:4 92:23 104:23 106:4 114:23 115:23 117:15,21 124:5 130:21 131:10,10 144:1 150:9 154:9 171:23 172:22 173:7,9 174:22 175:2,3 176:22 182:15 188:3 189:12,15,15 199:23 208:12 219:13 221:2,19 224:16 233:11 241:9,10,14 242:3 246:23 247:1 248:5 256:25 263:22,23 264:3 268:14,20 281:4 281:11,19 282:4,5 <b>believed</b> 107:16 114:23 <b>believes</b> 188:22,23 230:2 281:7,8,9	<b>believing</b> 154:8 161:15 205:16 <b>bell</b> 62:24 63:2 170:5 <b>belong</b> 272:25 <b>belongs</b> 122:5 <b>beneficial</b> 27:18 27:25 138:23 <b>benefit</b> 58:6 133:13 <b>benefits</b> 117:4,5 133:17,18 <b>benign</b> 213:9 214:1,3,18 276:25 <b>benjamin</b> 102:21 <b>best</b> 18:24 22:18 45:18 90:3 131:4 132:21 134:20,20 140:8 146:13 147:3 186:10 208:20 269:25 270:1 <b>better</b> 129:11 150:16 153:11 161:9 177:17,18 207:22 224:6 254:9 259:13 275:10,11 277:18 277:21,21 <b>beyond</b> 204:15 245:19 <b>bhar</b> 197:23 <b>bhargara</b> 197:23 <b>bias</b> 130:7,15,20 262:12 <b>biased</b> 261:25 262:11 <b>bibliography</b> 70:9 <b>big</b> 83:19 147:21 162:5,5 244:16	<b>bilateral</b> 25:11 49:12 <b>biologic</b> 25:12 200:9 220:9 223:23 <b>biological</b> 196:9 198:24 199:2 214:8 <b>biologically</b> 180:14 206:4,11 <b>biology</b> 189:1 200:7,8 <b>birth</b> 19:13,18 80:2 196:16,22 <b>birthday</b> 140:24 <b>bisexual</b> 232:12,13 <b>bit</b> 75:17 78:24 108:13 187:19 208:3 <b>blame</b> 272:22 <b>blanchard</b> 225:6 <b>blessing</b> 117:11 <b>block</b> 12:23,23 <b>blockages</b> 56:25 <b>blocker</b> 220:6 <b>blockers</b> 93:16 95:15 213:9,18,22 214:2,5 216:15,17 216:19 218:14,21 218:25 219:8 <b>board</b> 1:9,10 2:9 2:10 5:14 6:3 11:13 13:2,5 21:9 32:20 78:19,23 79:6,9,11 83:2,2,6 84:2 286:20,23 <b>bodies</b> 225:17 262:8 <b>body</b> 199:5 200:4 200:6 213:25 214:9 215:10
--	---	--	--

**[body - capacities]**

277:8,23,24 <b>body's</b> 234:8,9 <b>bonding</b> 199:11 <b>bone</b> 215:1 <b>bones</b> 214:10 <b>book</b> 74:21 76:10 225:16 <b>borderline</b> 126:3 <b>born</b> 142:12,19 232:13,14 <b>borrows</b> 202:2 <b>boston</b> 3:15 <b>boulevard</b> 6:8 <b>bound</b> 120:14 <b>bounded</b> 120:14 <b>boy</b> 36:8 128:24 142:7,12,12,22 154:5,5 276:12 277:7 <b>boylston</b> 3:13 <b>boys</b> 142:23 143:3 204:18 224:4 275:23 <b>brain</b> 56:5 199:4 200:3,6 214:12 217:7 221:6,6 264:13 <b>branch</b> 93:9 243:4 <b>break</b> 18:15,16,21 51:5,7,10 64:13 91:17 105:16,22 108:1 146:25 148:21,22 156:3 163:11 207:8 208:2 254:19 <b>breaking</b> 148:20 <b>breast</b> 133:13 <b>breasts</b> 116:8 132:2 277:25 <b>bridgeport</b> 6:9	<b>brief</b> 75:20 <b>briefly</b> 181:21 182:1 285:25 <b>bring</b> 172:12 <b>broad</b> 148:14,14 209:10 246:4 <b>broadly</b> 25:17,22 <b>brooks</b> 4:17 13:13 13:13 14:15 16:8 27:15 35:20 36:9 37:12 40:13 41:15 43:10 48:10 49:3 49:19 50:1,12,16 50:22 51:4,8,12 52:3,5,7,14,16,19 54:10 55:13 56:11 57:4,12,21 58:23 59:5,11,18,25 61:4 61:16,25 63:5 65:1 66:1,17 67:9 67:17 68:6,17 69:20,22 70:7 75:19 76:4,7,10,17 76:20 78:16 83:25 85:12 86:15 91:13 91:15,20,22 92:2 94:12 102:14 105:12,15 106:14 106:17,20 108:2 108:17 109:3,7 111:13 119:3,5,22 120:2 128:3 134:10 141:25 143:18,21 144:5 145:12,17 146:3 148:19,25 150:12 151:20 153:2 154:20 156:14 158:19 159:12 161:19 162:24 163:9 164:9	165:14 169:15 171:4 178:9,14 180:24 183:4 184:3,5,11 185:3 187:1 192:3 193:14 195:15 196:12,23 198:4 200:19 201:11,15 201:23 202:18,23 203:1,10,16 205:22 206:19 207:7,10,18,20 213:1,19 218:2,16 218:23 219:15,18 219:20 220:23 221:22 224:8 226:11,19 227:7 228:17 229:20 230:24 231:9,13 231:25 232:21 234:4 235:12 238:15,22 239:1,6 240:23 241:6,24 243:11 244:12 246:20 247:8,10 247:19,23 249:5,7 249:17,23 250:7 251:11,25 252:4,8 254:12,14 259:9 282:17,21,24 283:1,6,13 285:1 286:12,12 <b>brought</b> 40:20 53:3 118:6 120:13 120:13 235:9 <b>brouhaha</b> 200:21 200:25 <b>bunch</b> 97:7,8 233:8 <b>burch</b> 1:11 2:12 5:15 13:6 286:21	<b>bury</b> 134:7 <b>business</b> 133:25 259:20 <b>busy</b> 54:15 60:18 174:3 238:16
			<b>c</b>
			<b>c</b> 237:6 <b>california</b> 5:8 39:11 40:6 289:2 <b>call</b> 45:19 85:20 98:15 99:19 102:24 108:23 110:4 120:15 121:6 133:5 146:23 191:2 208:14,14 229:23 236:12 259:16 284:15 285:10 <b>called</b> 14:19 21:16 22:1,5,8 27:6,6 29:1 37:24 56:14 98:3,4 103:4 111:2 114:6,20 122:20 143:12 144:17 170:24 242:15 260:20 <b>calling</b> 185:4 <b>calls</b> 159:12 183:4 184:5 187:1 247:10 <b>camera</b> 78:5 207:21 <b>cancer</b> 190:19 192:13 242:17 271:6 <b>canteen</b> 23:20 24:7 25:5,6,7 <b>capable</b> 240:12 <b>capacities</b> 57:1,2 208:17

**[capacity - change]**

<b>capacity</b> 1:12,13 2:12,13 234:9 235:2 <b>caption</b> 64:7 65:11 65:15 71:1 <b>captured</b> 19:2 <b>card</b> 278:17 <b>cardiac</b> 57:2 <b>cardiovascular</b> 271:6 <b>care</b> 22:20,24 23:2 23:16,17 25:17,22 30:25 31:11 32:6 33:7 35:14,15 37:20 39:23 42:17 46:25 56:21 60:4 82:25 90:15 100:11 103:2 110:12 113:20 114:20,21 115:10 115:22 116:2,5,16 116:16,21,24 117:24 118:7,16 118:19,20 119:1,2 119:10,20 120:8 120:17,18 125:6 129:15 133:6,8 134:13,15 135:15 159:2 170:4 172:6 183:23 184:1 190:17 201:10 202:1 204:7,8 208:9,9 211:10 225:25 243:6 244:9 246:24 264:13 265:15 266:8,10 267:5,6 270:18 272:21 274:2 280:3,12,23 280:25 281:3 284:4,8,14,16,16	285:13 <b>cared</b> 127:10 <b>career</b> 24:18 84:25 85:11 86:13,23 87:12 257:23 <b>careful</b> 36:14 103:23 116:23 118:20 <b>carolina</b> 21:16 22:1 31:2 32:24 72:21 <b>case</b> 11:15 15:14 15:16,21 19:22 20:15,18,20,25 21:5 22:5,8,10 23:4 29:18 31:4 33:20,22 34:8 35:16 36:10,17,23 37:20,22,24 39:2 39:22 40:1,5,5,15 40:18 41:2,8,17,17 41:18,21,25 42:3,9 42:10,23 44:3,11 44:14,17 45:12,13 46:2,3,4 49:7,8 50:11 51:20 52:20 52:24 53:3,10,12 53:17 54:2,4,7,19 55:10,12,20,22,25 56:8,11,17,21 57:17,20 60:12 61:2 62:12 64:14 65:12,16,21,23 66:5,7,11 67:8,16 67:19,22,23 68:5 68:15,15,21 69:1 71:1,10,20 72:1,25 87:21,24 88:5,21 89:10 94:23 100:1 110:15,21 115:19 117:13 126:6,21	142:6 143:6,12 145:22 146:16 158:17 163:17 164:15,17 167:23 168:8,12,13,19,25 169:2,6,11,13 170:12,15,17,20 170:24 174:13,14 176:14 193:19 198:17 199:21 223:8 229:7,7 249:1,9,13,22 251:3,12,15,16 253:11,11 254:1,2 262:5 273:18,24 274:24,25 <b>cases</b> 22:20 24:8 30:10 31:22 40:16 40:17,19 49:13 89:14 100:11 121:9 167:20 169:19 170:18 <b>categories</b> 86:20 <b>cause</b> 150:20 154:14 157:14,17 157:24 162:9,10 183:11 229:8 <b>causes</b> 214:10,11 <b>causing</b> 180:15 181:12,13 183:3 <b>caution</b> 16:9 36:10 232:24 <b>cease</b> 222:10 <b>celebrity</b> 272:11 <b>censor</b> 63:18 <b>center</b> 285:9 <b>certain</b> 42:16 58:5 61:1 63:19 74:7 135:20 149:8 155:13 164:22 174:14 176:3	192:11 195:23 209:8 215:13 217:1 282:9 <b>certainly</b> 32:2 44:6 86:11 99:21 126:23 171:23 172:18 173:16 174:13 209:16 227:13,13 237:3 248:9 253:3 264:8 <b>certainty</b> 55:2 73:5,6,8,10,13,13 73:15,18 74:8 75:12 142:13 241:13 <b>certifiably</b> 214:20 <b>certificate</b> 80:22 113:10 <b>certificated</b> 80:16 <b>certification</b> 79:3 <b>certifications</b> 79:7 <b>certified</b> 2:24 78:20,24,25 79:9 79:11 84:2 289:1 <b>certify</b> 289:2,11 <b>chain</b> 263:21 264:15 269:24 <b>chair</b> 121:17 <b>chairman</b> 103:3 112:1,11 <b>challenged</b> 143:12 145:21,24 158:17 <b>challenges</b> 160:12 237:21 <b>challenging</b> 64:15 <b>chance</b> 40:9 254:10 <b>change</b> 74:8 110:25 149:7 189:5,5 193:25 195:18 200:24
--	--	---	---

**[change - clinical]**

229:4,8,11 231:23 232:7 234:9,10 240:5 248:9 257:24 258:19 262:7,8 273:8,15 <b>changed</b> 110:22 111:15 182:11 193:9 229:10,22 258:15 <b>changes</b> 14:22 92:16 157:1 194:11,15 214:9 214:13 215:3,10 241:16 <b>changing</b> 189:4 217:7 220:14 234:8,13,13 240:12,13,13,14 270:15 <b>chapters</b> 76:10 <b>characteristic</b> 225:3 <b>characterize</b> 211:23 <b>characterizing</b> 193:15 251:16 <b>charge</b> 266:11 <b>charleston</b> 1:3 2:3 5:9,22 6:21 7:10 11:15 <b>check</b> 33:2,2 99:7 99:11 109:23 198:19 <b>checking</b> 91:13,16 <b>cheerleader</b> 116:7 <b>chicago</b> 62:23 <b>child</b> 33:13,14,24 34:14,14,19 35:2,6 35:14 36:2,5,5 37:21 38:5,12,17 38:25 44:4,5,12,15	44:18 45:14 54:5 79:9,12,17 80:10 80:12,17,17,23 83:13,21 84:2,14 84:15 85:10,18 86:18,24 91:2 99:18 113:11,12 113:14,15,16,16 114:9 117:10,12 117:17 120:18 121:2,12 123:6,12 127:9,13,19 131:4 132:8,11,13,15 134:2 140:3 141:18 145:2 146:20 149:7,10 151:3 152:18 153:25 157:19 158:1,24 159:4,8 162:8,12 169:4 170:4 173:10 186:18 195:10 203:25 204:2,5 209:2 215:24 216:16 220:6,7,7 221:15 223:10 234:14,19 238:4 239:15 240:1,5,14 279:3,5,7 <b>child's</b> 85:22,23 123:24 204:3 <b>childhood</b> 79:24 84:9,19 85:6,7 <b>children</b> 34:3 43:9 43:17,21 44:25 60:8 81:2 84:22 84:22,25 85:4,5,15 85:25 86:10,11,13 86:16,21,22 87:2 100:3,7 122:7,11 130:25,25 131:22	146:13 147:12 157:13 158:8 160:18 162:14 165:3 169:3 173:14 199:14 209:1 215:6,6 271:12 273:1 <b>children's</b> 62:23 85:8 <b>china</b> 141:14 <b>choice</b> 210:20,21 210:21 235:4 <b>choose</b> 168:11 182:20 233:17 <b>chosen</b> 214:6 <b>church</b> 128:22 <b>cincinnati</b> 37:23 38:1 44:17 46:4 <b>circuit</b> 41:4,5 167:24 <b>circumstances</b> 134:14 <b>cis</b> 221:16 228:24 244:1 <b>cisgender</b> 19:11 222:17,23,25 223:20,21,23 224:1,2,7 <b>citation</b> 76:13 236:5 <b>cite</b> 164:5 197:15 236:2 245:20 <b>cited</b> 59:23 <b>cities</b> 118:16 <b>citing</b> 197:25 285:18 <b>city</b> 288:11 <b>civil</b> 135:7 246:24 248:18,24 250:18 250:23 251:22 253:23	<b>claim</b> 125:17 169:13 202:3 <b>claims</b> 57:22,23 <b>claire</b> 22:5 31:1,22 52:24 53:8,23 54:7 55:10 170:24 <b>clarify</b> 66:12 86:17 <b>clarifying</b> 107:12 141:21 <b>clark</b> 15:17 17:12 26:11 <b>classes</b> 88:4,6 89:7 <b>classic</b> 89:5 <b>clayton</b> 1:11 2:12 <b>clear</b> 18:8 45:5,8 50:6,8 55:8 83:23 133:12,14 191:23 243:7 253:6 <b>clearly</b> 56:22 217:5 <b>clerk</b> 13:16 <b>cleveland</b> 112:15 112:17 113:12 114:5 120:22 126:1,12,16 209:18 210:3 <b>client</b> 95:4 <b>clinic</b> 110:13,16,19 111:3,7 113:12 114:3,4,5 120:4 125:24 126:1,12 126:17 130:6 165:7 166:4 177:8 188:4,7,12 274:14 274:16 284:1 <b>clinical</b> 54:12 73:15,20,24,25 75:1 87:21 89:10 93:12 111:4 112:20 113:16,17
--	---	---	--

**[clinical - compliment]**

125:12 246:1,1 252:23 <b>clinician</b> 60:4 74:2 <b>clinician's</b> 77:10 <b>clinicians</b> 97:7,8 113:22 117:21,25 120:7 <b>clinics</b> 130:5 183:10 283:21 <b>clip</b> 8:22,24 9:1,3 9:5,7,9,11,13,15 9:17,19,21,23,25 10:2,4 257:5,11,18 258:13 260:16 261:23 262:24 263:13 264:20 265:13,24 267:3 267:24 269:2,21 270:10 271:4 272:20 275:6 278:6,25 279:20 <b>close</b> 158:5 186:21 <b>closed</b> 201:18 <b>closely</b> 35:3 <b>closer</b> 71:7 209:5 215:7 281:12 282:10 <b>closes</b> 214:16 <b>coaching</b> 153:6,11 184:19 <b>cochlear</b> 217:3 <b>cochrane</b> 92:7,10 92:12,13,14,15 93:3,4,20,24 95:8 95:9,11,13 96:2,5 96:18,21 <b>cohabitating</b> 243:25 <b>coin</b> 129:20 171:16	<b>coined</b> 171:14,23 <b>coining</b> 171:15 <b>collabor</b> 95:9 <b>collaboration</b> 93:3 93:4,20,25 95:9,11 <b>collaborative</b> 92:7 92:10,13,14 <b>colleague</b> 13:16 <b>colleagues</b> 12:6 77:17 90:2 125:15 281:7,23 <b>collect</b> 278:12 286:1 <b>collector</b> 278:10 278:11,16,17,19 <b>college</b> 88:8,8 139:9,9,10 210:12 222:1,2 251:4,6,20 252:13,14 <b>colleges</b> 250:20 <b>columbia</b> 283:22 <b>come</b> 17:3 24:8 33:2 78:4 84:8 88:24 89:13 101:9 103:22 105:15,18 129:8 130:10 136:8 154:12 177:6 178:22 202:5 207:13 209:17,25 216:7,9 223:10 233:11 234:20 235:19 244:4 269:3 276:20 <b>comes</b> 32:5 69:5 84:8 89:2 92:16 112:24 134:21 183:7 209:5,9 233:20 280:24 <b>comfort</b> 94:17	<b>comfortable</b> 34:24 233:9 245:15 <b>comfortably</b> 276:7 <b>coming</b> 89:8 109:24 130:5 202:16 221:10 276:12 282:17,17 <b>comment</b> 159:2 <b>commented</b> 38:15 <b>commission</b> 1:11 2:11 6:15 7:4 13:9 287:5 <b>commitment</b> 116:6 <b>commitments</b> 94:18 <b>commits</b> 183:1 <b>committed</b> 109:21 <b>committee</b> 24:21 93:13 101:3,7,9,10 107:10 113:1 124:24 128:6 211:14 266:4,11 <b>committees</b> 93:14 93:15,19 96:20,23 <b>common</b> 28:8 160:25 <b>commonly</b> 24:6 <b>commun</b> 248:11 <b>communicated</b> 114:14 <b>communications</b> 58:12,13 <b>community</b> 32:6 89:13 100:13 105:3 120:16 130:9 160:22 225:12 244:17 246:11,15,18,22 248:11 253:4	<b>comorbidities</b> 118:21 181:19 272:22 <b>comorbidity</b> 186:17 <b>compani</b> 104:17 <b>compared</b> 192:15 193:17 <b>comparing</b> 164:14 180:12 191:5 198:16 <b>compelling</b> 131:6 <b>compete</b> 21:7 142:23 143:4 145:8 147:16 <b>competent</b> 117:9 <b>competing</b> 153:21 154:14 180:19 181:2 198:7 201:10,25 <b>complain</b> 123:22 123:23,25 <b>complained</b> 125:5 <b>complaining</b> 236:17 <b>complaint</b> 127:15 <b>complaints</b> 82:9 83:6 121:1 127:13 169:17 <b>complete</b> 29:21 189:19 214:24 <b>completely</b> 215:12 215:14 <b>complicated</b> 74:4 155:15 161:7 169:23 216:2 277:10,10 <b>complications</b> 224:13,15 234:18 <b>compliment</b> 107:7
--	---	--	--

**[compound - continues]**

<b>compound</b> 111:13 151:20 153:2	<b>conduct</b> 36:17 175:15	<b>consensus</b> 136:10 136:11 246:4	252:14
<b>comprehensive</b> 96:14	<b>conference</b> 90:16 100:19	<b>consent</b> 43:19,20 60:7,8 105:6,7	<b>constantly</b> 171:19
<b>comprehensively</b> 145:3 146:1,5	<b>conferences</b> 89:11 89:13	107:6 116:13,19 205:25 211:19	<b>constitute</b> 86:25
<b>conceive</b> 79:25	<b>confidence</b> 36:16	221:6 248:1	<b>constitutes</b> 85:24
<b>conceived</b> 30:7	<b>confidential</b> 36:16 94:15,21 95:24	<b>consequence</b> 227:11	<b>constrained</b> 94:10
<b>concept</b> 30:9 73:4 98:16 107:9 150:3	106:21 109:5	<b>consequences</b> 35:5 46:24 131:15,18	<b>construct</b> 198:11
158:21 225:5,8,9 226:7 230:12	<b>confidentiality</b> 16:11 36:12,22	171:20 174:24	<b>consult</b> 114:18
242:15,18,21	<b>confined</b> 245:11	248:4	124:21 126:5
<b>conception</b> 197:10	<b>confirm</b> 260:8	<b>conservative</b> 261:25	<b>consultant</b> 24:4,20 26:3
<b>concepts</b> 84:13 100:12 115:3,5	<b>confirmation</b> 24:2 171:2 272:5,8	<b>consider</b> 44:24 99:9 111:10,17,21	<b>consultation</b> 45:23 178:19
216:25	<b>confirmed</b> 236:23	116:9,20 152:16	<b>consulted</b> 114:2 123:15,16 126:7
<b>conceptual</b> 198:7	<b>confirming</b> 25:12 27:7 28:3	154:6 163:21	<b>consulting</b> 54:13
<b>conceptualize</b> 47:5 96:8 181:12	<b>confirms</b> 125:6	180:2 181:19	<b>contact</b> 120:10
<b>conceptualized</b> 55:23	<b>conflict</b> 222:4 252:18	215:1 221:7 280:9 280:11	<b>contacted</b> 122:5
<b>concern</b> 121:5 149:9 216:10	<b>conflicts</b> 161:5 215:21	<b>considerable</b> 74:15 239:9	<b>contain</b> 256:11
231:5 247:17	<b>conforming</b> 133:10	<b>considerate</b> 248:2	<b>contained</b> 288:8
<b>concerned</b> 122:6 129:6 179:13	<b>confronted</b> 171:20	<b>consideration</b> 42:12 116:23,25	<b>content</b> 94:8 157:11
194:9	<b>confused</b> 142:18 237:23	<b>considerations</b> 151:23	<b>contention</b> 272:4
<b>concerns</b> 135:7 160:1 195:21	<b>confusing</b> 53:2	<b>considered</b> 61:19 104:24 107:7	<b>contents</b> 17:5
277:22	<b>conjunction</b> 105:2	149:25 152:15	<b>context</b> 43:2 47:22 144:12 263:2,5,6
<b>concierge</b> 7:16	<b>connect</b> 207:4 212:12	215:11	283:15
<b>conclude</b> 161:22	<b>connected</b> 56:12	<b>considering</b> 175:3 210:4	<b>continents</b> 166:8
<b>concludes</b> 287:12	<b>connectica</b> 15:14	<b>considers</b> 270:13	<b>continue</b> 11:6 38:25 82:25
<b>conclusion</b> 38:22	<b>connecticut</b> 15:14 15:18,18,21 42:9	<b>consistent</b> 96:21 128:14 130:11	102:19 150:10,13 150:20,23 157:14
<b>conclusions</b> 201:3	<b>connection</b> 95:2 144:12 177:25	153:15 158:2,9 159:10 161:17	157:14 158:1 210:15,16 219:18
<b>condemn</b> 119:18	<b>connotation</b> 81:11 214:19	162:21 251:5,19	219:19 247:7
<b>condition</b> 131:16 133:4 183:1			<b>continued</b> 4:1 5:1 6:1 7:1 38:9
<b>conditions</b> 159:23			110:21,24 139:3 210:17 222:20
			<b>continues</b> 151:7 193:3 219:13



**[continuing - creating]**

<b>continuing</b> 89:20 158:10 247:17	26:20 28:14,15,18 28:19,20 30:6,13	<b>correctly</b> 105:1 115:20 145:10	174:16 176:20 179:13 182:24
<b>contrary</b> 59:11	33:15 34:9 42:1,4	<b>cost</b> 222:16,18,19	208:10 229:6
<b>contrast</b> 73:20 180:6	44:15,16 47:19,25 49:2 51:20,21	<b>counsel</b> 5:15 11:10 11:22 12:5,19	263:9 264:16
<b>contrasting</b> 73:23	53:8,13,21,24,25	14:13 16:8 17:22	<b>courses</b> 88:9,9 89:21
<b>contribute</b> 106:5	54:1 55:15,17,19	18:1 37:2 57:12	<b>coursework</b> 89:17
<b>contributed</b> 71:23 99:3	57:24 61:10 64:10 64:11,25 69:21	58:13,15,18 59:7 59:15 61:16 70:7	<b>court</b> 1:1 2:1 11:14,18 13:19
<b>contribution</b> 198:25	71:2 73:2,18,24 74:24 78:20,22	102:13,18 105:12 106:20 148:19	18:25 20:2 29:18 30:19 31:9 33:25
<b>control</b> 192:5,6,10 212:4 247:1 270:17	79:10 81:22 83:24 86:10 87:22 92:5	153:10 165:10,14 203:23,24 207:7	35:4,17 37:10 39:5 40:12 41:2,4
<b>controversial</b> 93:8	102:10 103:8 110:16,17 115:10	217:22 220:23 238:15,15,22	41:5,14 48:2,4 49:13 50:13 51:3
<b>controversies</b> 92:20	123:20 124:8,9,12 125:19 126:14	239:13 251:14 269:15,17 286:23	58:6 64:20 69:25 218:1 256:22
<b>controversy</b> 75:3	129:23 130:3 141:5 152:8	<b>counsel's</b> 60:24 94:14	258:12 260:15 261:22 263:12
<b>convenient</b> 105:15	159:23 160:2,5 166:24 180:20,21	<b>counselor</b> 263:24	265:12 267:2,23 269:1,14 270:9
<b>convening</b> 121:19	180:23 181:5 182:4 183:19	<b>countries</b> 104:16 104:17 130:19	271:3 272:19 275:5 278:5,24
<b>conversation</b> 57:9 57:11 78:11 82:6 85:18 180:13 246:16 256:14 266:15	184:2,9 186:6 197:10 202:24 203:5,15 206:3	<b>country</b> 120:23 249:14 251:6 258:16	279:19 <b>court's</b> 42:12
<b>conversations</b> 57:5,13 85:6	211:19,24 213:5 219:22 220:21	<b>county</b> 1:9,13 2:10 2:14 6:3 13:2 38:1	<b>courtesy</b> 70:13
<b>convert</b> 263:24	236:4 241:17,23 243:10 246:16	38:1 258:21 286:23	<b>courtroom</b> 39:17
<b>conviction</b> 123:19 192:12	255:7,10,14 257:2 258:6 260:1 261:6	<b>couple</b> 19:9 21:14 56:4,6 90:23	<b>courts</b> 41:1,9 42:21 169:5
<b>cookie</b> 159:4,11,17	268:20 272:14 276:13 283:5,12	91:12 105:21 110:6 148:23	<b>coverage</b> 30:11,12 30:18 31:3,15,23
<b>cooley</b> 3:4 12:3,6,8 12:10,12,14,16,18 14:19	283:22 288:9 <b>corrected</b> 76:1 200:18 288:8	167:20 192:19 196:7 282:13	33:7 41:3
<b>cooley.com</b> 3:17 3:18,19,20,21,22	<b>correction</b> 25:9 <b>corrections</b> 15:18 15:19 24:20 40:7 288:6	<b>courage</b> 124:4 <b>course</b> 24:17 25:11 44:4 80:12	<b>covered</b> 16:11 43:20 205:3
<b>cooperate</b> 141:11		84:5 88:8 109:3 139:2 140:2 158:2	<b>create</b> 103:19 173:8,24 179:17
<b>cooperating</b> 189:4		171:10 172:2,9	186:19 229:3
<b>copresenters</b> 90:9			<b>created</b> 52:2
<b>correct</b> 15:6 21:2 22:13,16,21 26:14			<b>creates</b> 173:15
			<b>creating</b> 103:7 130:14 173:4

**[creating - declare]**

181:8 188:17,21 189:16 234:13 <b>credential</b> 169:10 <b>credentialed</b> 80:16 107:21 <b>credentials</b> 72:15 113:10 280:21 <b>credit</b> 171:15 <b>criminal</b> 190:20 <b>criteria</b> 38:9 116:17 118:17 266:12 284:3 285:5,14 <b>cross</b> 23:21,21 37:16 54:17,21 93:17 138:2,8,11 160:21 168:7 181:17 182:19,25 189:17,23 190:6,8 191:2 217:14,15 224:4,14 243:24 249:14 251:6 273:1 <b>crossed</b> 82:24 <b>crystallization</b> 276:5,10 <b>csr</b> 1:24 289:21 <b>cultural</b> 147:22 148:14 <b>culture</b> 148:18 <b>cure</b> 242:16 <b>cured</b> 228:13,14 228:19 229:19 <b>curiosities</b> 236:20 <b>curious</b> 53:16 164:24 171:13 192:22 193:24 195:13 233:24 <b>current</b> 17:9 21:8 23:19 65:16 71:23 154:1 172:8,19	173:11 228:5 278:7 <b>currently</b> 55:14 88:4 105:25 151:4 165:8 166:9 167:12 241:8,9 <b>curriculum</b> 60:2 75:20 113:2 <b>custody</b> 33:13 36:4 <b>cut</b> 72:16,17 112:5 <b>cute</b> 179:4 <b>cv</b> 1:8 2:8 11:16 16:14 65:12 75:14 75:23 76:12,15 77:4,16,18,21 78:14 87:20 91:11 92:4 97:15 108:13 109:23 168:7 170:18,19 <b>cycle</b> 46:21 79:19 171:19	289:17 <b>datewise</b> 140:17 <b>daughter</b> 86:4,5 197:3 <b>dave</b> 262:22 286:15 <b>david</b> 5:6 13:10 51:23 52:1 <b>david.c.tryon</b> 5:11 <b>day</b> 80:21 111:11 111:21,25 112:1,7 112:10 239:4 258:23 280:18 288:10 <b>days</b> 27:5 60:6 112:10 135:24 209:15,18,19 210:1,7,8 257:12 <b>deal</b> 149:22 157:11 162:5 215:20 <b>dealing</b> 116:13 174:3 <b>deals</b> 172:17 <b>dealt</b> 177:5 <b>death</b> 80:2 139:19 190:19 261:3 271:6 <b>debate</b> 252:8 <b>debt</b> 112:3 <b>decades</b> 93:21 176:23 <b>deceased</b> 140:3 <b>december</b> 22:5 <b>decide</b> 58:1 117:10 133:25 135:10,11 135:12,12 210:15 217:13,14 273:7 <b>decided</b> 25:5 82:15 239:16 257:16 258:17	273:14 <b>decides</b> 228:1 <b>decision</b> 16:25 32:1 117:2,14,18 131:1 134:5,6,9 135:7 139:24,25 140:1 141:12,13 147:2 169:14,23 179:23 204:12 233:19 279:7,8 281:6 <b>decisions</b> 134:12 134:14,19,23 135:1,5 171:21 172:13,19 173:13 270:15 <b>decisive</b> 205:13,15 205:18 206:23 <b>decker</b> 7:19 11:17 <b>declaim</b> 186:9 <b>declaration</b> 8:11 8:16 42:7 43:8,16 45:9 62:12,18 63:9,13 64:6,8,14 64:19,25 65:7,18 65:23 66:6,10 67:6,15 68:14 70:3 73:2,2 137:19 143:16,17 156:5,10 164:14 164:16,22,25 165:19 167:12,17 171:9 193:4,5,17 193:18 198:16 212:20 223:8 235:11 251:17 <b>declarations</b> 61:9 61:14 213:14 <b>declare</b> 24:25 186:9 275:23 288:4
	<b>d</b>		
	<b>d</b> 37:24 190:14 198:2 <b>daily</b> 85:9 <b>dark</b> 111:11,21 112:1,10 <b>darkness</b> 111:24 <b>data</b> 96:7,10 122:13 124:8 128:11,13,15,15 128:16 130:5 131:6,7 177:16 181:17 189:8 190:12 243:2,24 279:8 280:24 <b>date</b> 68:9,11 289:14 <b>dated</b> 70:3 244:11 244:15 256:12		



**[declares - development]**

<b>declares</b> 186:19 206:5	<b>deliberation</b> 116:22,24	<b>depending</b> 72:18 89:12 203:21	<b>description</b> 8:10 259:9
<b>declaring</b> 100:7	<b>deliberations</b> 101:10	208:15	<b>designate</b> 94:15,20 95:23 106:20
<b>decompensations</b> 23:9	<b>delighted</b> 30:1	<b>depends</b> 48:13 166:13 220:5	<b>designated</b> 156:24
<b>deduce</b> 115:2	<b>delineated</b> 26:1	222:16	<b>desired</b> 33:21
<b>deep</b> 60:17 183:12	<b>delivering</b> 266:21	<b>deposed</b> 15:5,13 20:15 21:13 33:13	<b>desistance</b> 35:8 220:20 221:2
<b>deeply</b> 129:6 285:2	<b>delivery</b> 134:13 197:1,2 280:12,13	<b>deposition</b> 1:19 2:20 11:10 13:16	<b>despite</b> 239:15
<b>defeated</b> 152:4	<b>delusional</b> 107:19	15:8,11,22 16:14	<b>detail</b> 16:9,12,20 138:22 229:10
<b>defend</b> 40:9 254:2	<b>demagogue</b> 280:9 281:4,12,19	17:4,4,11,12,13,18	<b>details</b> 214:9 249:9 274:23
<b>defendant</b> 1:17 2:18 14:12	282:11	19:10 21:17,19,25	285:21
<b>defendants</b> 1:15 2:16 6:3 14:12	<b>demagoguery</b> 280:2	22:4,9 37:8 39:19	<b>determination</b> 27:22
31:4 47:18 48:19	<b>demagogues</b> 280:3	52:23 53:7 58:8	<b>determine</b> 16:15 137:8
65:24 66:5 249:12	<b>demonstrate</b> 242:16	58:22 59:10,17,20	<b>determined</b> 185:20,21 197:9
253:12 286:23	<b>demonstrated</b> 122:10 190:15	60:16 62:9 252:9	197:12 206:7
<b>defending</b> 4:16 13:14,15 52:3,8,12	232:3 282:3	254:9 255:13	238:6 281:8
52:17,25 53:20	<b>demonstrating</b> 137:15	258:4	<b>detransition</b> 154:4 229:9 242:5,22
<b>defense</b> 14:13 245:2	<b>demonstration</b> 101:22 102:4	<b>depositions</b> 21:14 22:14,17,19	243:1,2
<b>deficient</b> 259:1	<b>denial</b> 159:11	<b>depressed</b> 269:3 273:6,13	<b>detransitioned</b> 228:2,21 229:1
<b>definable</b> 209:13	<b>deniker</b> 6:6 12:25	<b>depression</b> 120:19 149:20 155:3	<b>detransitions</b> 153:19
<b>define</b> 84:2,3	12:25 48:21,21	273:2	<b>develop</b> 99:12 100:1,12 103:13
<b>defined</b> 25:22	286:22,23	<b>derivative</b> 53:24 54:7 55:11 146:18	104:8,19,25 107:5
<b>definition</b> 73:15 116:1,3,4 119:12	<b>denominator</b> 185:8,9,19,19	<b>derived</b> 41:20	217:8 227:10
119:14,15 125:18	187:9,16 269:6	<b>describe</b> 23:1 79:15 94:2 96:4	243:17
280:14 281:12	<b>deny</b> 229:13 249:13 250:3	128:19 198:13	<b>developing</b> 104:6 194:14 276:8
<b>definitive</b> 242:19	<b>denying</b> 53:14	231:4 255:20	<b>development</b> 79:13,17,19 80:4
<b>definitively</b> 55:6,9 56:2	<b>department</b> 5:16 15:17,18 20:19	<b>described</b> 25:18 28:17 33:5 34:1	80:10,18,21,24
<b>degree</b> 55:2 73:5,7 73:8,12 258:21	24:20 40:6 111:11	123:5 140:6 223:9	84:18,18 104:9
<b>degrees</b> 98:5,7 159:16	111:12,22,22	229:10 255:6	113:15 214:14,15
<b>del</b> 3:6 12:13,14	112:3,5,6,14	<b>describes</b> 25:3	
<b>deleted</b> 71:20,25 198:18,21	113:12,14 257:13	<b>describing</b> 105:7 138:21 194:23	
		230:16 283:11	

**[development - doctor's]**

216:25 <b>developmental</b> 16:1 80:7 116:18 122:12 198:13,23 199:10 214:14 <b>devised</b> 26:8 <b>devoted</b> 93:7 <b>diagnose</b> 279:2 <b>diagnosed</b> 121:12 123:6,12 <b>diagnosis</b> 115:25 125:6 128:1 138:22 <b>diagnostic</b> 138:4 <b>diamond</b> 232:2 <b>diamond's</b> 242:12 <b>dictated</b> 206:4,11 <b>die</b> 131:16 271:11 271:11 <b>died</b> 139:11 260:22 <b>dietary</b> 276:2 <b>difference</b> 77:1 138:17 185:17 191:11 192:1 220:2 280:2,15,19 <b>differences</b> 138:18 229:3 <b>different</b> 18:16 47:2 54:16 68:21 69:17 71:10 73:16 84:21 98:6,7 103:25 104:1,14 115:5 119:13 138:13 150:3 177:20 183:18 186:20 199:8,22 206:7,8 220:8 232:10 234:23 241:21 242:11 264:13 282:2	284:11 <b>differently</b> 97:20 <b>difficult</b> 24:19 54:11 223:1 233:13,19 270:18 274:5 <b>difficulties</b> 160:24 161:3 236:17 <b>difficulty</b> 231:12 <b>dig</b> 78:11 <b>dilemma</b> 114:24 <b>dimensions</b> 234:21 <b>diminish</b> 26:6 <b>diminished</b> 243:19 <b>direct</b> 61:4 91:23 91:24 203:13 212:24 213:7 218:16 236:25 237:2 <b>direction</b> 60:25 279:3,4 289:8 <b>directive</b> 170:1,3 <b>directly</b> 104:21 123:11 125:12 127:25 128:2 <b>dis</b> 276:16 <b>disagree</b> 75:4 116:25 241:4,18 <b>disagreement</b> 14:14 <b>disagrees</b> 21:10 <b>disappear</b> 75:4 262:6 <b>disappeared</b> 201:16 <b>disappoint</b> 158:20 <b>disappointed</b> 149:18,19,21,24 154:25 159:1 <b>disappointing</b> 159:5	<b>disappointment</b> 111:18 149:19,23 150:2 154:17,22 155:2 159:8,16 161:16 162:1,3,23 <b>discern</b> 231:15 <b>discharge</b> 38:8 <b>discharged</b> 82:21 <b>disclose</b> 36:15 57:5 58:11 109:4 <b>disclosed</b> 16:14 95:25 <b>discontinue</b> 111:15 <b>discontinued</b> 111:9,9 <b>discourse</b> 148:12 <b>discover</b> 262:8 <b>discovery</b> 37:1 <b>discredit</b> 40:16 <b>discrimination</b> 161:1,4,9 250:20 253:24 <b>discuss</b> 89:14 94:8 209:11 <b>discussed</b> 14:7 29:23 38:19 48:17 52:21 93:2 127:14 255:2 <b>discusses</b> 180:19 <b>discussing</b> 26:12 36:25 83:8 120:4 131:8 171:8 <b>discussion</b> 64:12 90:24 208:5 <b>discussions</b> 24:23 88:18 96:16 107:9 <b>disease</b> 190:20 192:14 271:7 <b>diseases</b> 271:9	<b>dismiss</b> 116:23 <b>dismissed</b> 39:24 40:1,10,22 <b>disorder</b> 275:11 275:25 276:2,6,14 276:18,20 277:2 <b>disorders</b> 79:23 98:9 275:8,16 <b>disputing</b> 35:14 50:7 <b>disrupt</b> 105:17 <b>dissuade</b> 237:24 <b>distinct</b> 84:15 <b>distinction</b> 84:23 233:6 <b>distinguish</b> 81:15 160:16 281:13 <b>distraught</b> 182:25 <b>distressed</b> 129:12 165:10 <b>distressing</b> 159:22 <b>district</b> 1:1,2 2:1,2 11:14,14 41:2 167:24 <b>distrust</b> 74:8 <b>disturbed</b> 128:23 128:24 <b>dive</b> 60:17 <b>diverse</b> 245:3,3 <b>diversity</b> 148:4,4 <b>divinity</b> 258:22 <b>division</b> 1:3 2:3 11:15 <b>doc</b> 168:18 <b>doctor</b> 73:8 89:8 109:4 279:7,7,23 279:24,24 280:22 281:22 <b>doctor's</b> 130:22 279:1
--	--	---	--

**[doctors - education]**

<b>doctors</b> 82:23 88:11 131:3,10,10 131:11,25 132:18 132:22 134:17 135:4,10 147:2 264:11 270:18 272:21 280:3 281:25 <b>document</b> 51:9 63:7,11,15,25 65:10 70:6,7,11,18 72:23 144:4 165:23,24 195:21 197:17 201:16 212:11 <b>documentations</b> 69:5 <b>documents</b> 28:6 58:21,25 59:9 60:12,14 72:25 96:16,17 125:14 195:22 <b>doing</b> 31:8 35:3 47:5,8 51:4 54:15 117:8 118:12 125:8 126:4 129:10,11,13,18 133:18 136:17 138:25 161:6 179:11,12 188:21 188:25,25 190:24 210:12 216:1 270:20 276:21 282:5 <b>domi</b> 277:6 <b>dominant</b> 231:5 <b>dominate</b> 277:4,6 <b>dominates</b> 277:3 <b>dominating</b> 104:15	<b>donor</b> 106:7 <b>donors</b> 106:7 <b>dora</b> 1:12 2:13 6:4 13:2 <b>dorm</b> 139:11 <b>double</b> 198:19 <b>downstream</b> 146:23,24 147:5 <b>dr</b> 8:11 11:10 13:15 14:3 15:5 16:11 36:11 47:16 51:19 57:10 59:4 61:8,8,13,14,20,23 62:3,7,11 63:11,13 64:6,7,8 69:2 70:2 70:19 75:23 92:4 95:1,5 106:18 108:10 125:22 126:11,11,14 156:2 168:22 171:9 173:3,7,12 173:24 174:23 175:15,23 176:1 180:12 183:23 184:1,22 186:24 187:19,23,25 188:2,11,16,22,23 203:19 218:4 219:9 222:8 223:12 229:8 251:16 252:6,11 255:2 256:13 258:3 259:5 260:24 262:15 264:20 265:20 266:6 267:9 268:3 268:11 269:8 270:3,23 272:2 273:10 275:13 278:14 279:10 280:6 281:4,5,7,18	283:11,13,21 284:11 285:3,8 286:7,17,22 287:3 287:8,13,13 <b>draft</b> 96:17,25 193:11 <b>dramatic</b> 100:6 188:25 <b>dramatically</b> 149:6 157:1 <b>draw</b> 77:13 <b>drawing</b> 275:15 <b>druff</b> 96:25 <b>drug</b> 186:17 242:17 <b>duddy</b> 264:2 <b>due</b> 161:1 261:5 261:11 <b>dying</b> 192:13 <b>dysfunction</b> 180:15 <b>dysphoria</b> 22:21 22:24 23:3,16 26:20 30:13 33:8 35:15 36:2 37:21 81:2 102:21 103:14 108:24 110:5 130:23 165:2,6 166:4 194:25 198:7 221:3,5 223:14 240:2 274:20	130:21 164:17,21 198:17 204:7 223:8 246:3 255:3 255:13 258:4 259:15 260:25 262:16 264:21 265:21 267:10 268:4,15 270:4 280:7 <b>early</b> 171:20 214:23 215:22,23 225:10 271:5 <b>easier</b> 224:17 265:17 <b>easily</b> 235:8 <b>eastern</b> 167:23 <b>easy</b> 121:17 224:18 233:9,13 252:16 262:9 <b>eating</b> 275:7,11,16 275:25 276:1,6,14 276:16,18,20 277:2 <b>edit</b> 245:24 <b>edition</b> 103:4 285:16 <b>editor</b> 260:23 261:3 <b>editorial</b> 195:18 <b>edits</b> 72:6 <b>edmo</b> 41:17 <b>educa</b> 174:17 <b>educate</b> 131:3 132:10 <b>educating</b> 117:16 <b>education</b> 1:9,10 2:10,10 5:14,16 6:3 11:13 13:2,5 20:19 21:9 32:20 81:16 84:6,7 88:11 89:20 113:3
		<b>e</b> 6:19 7:8 15:1,1,2 15:2,2 23:5,5 37:24,25 106:19 106:19 135:20 190:14 201:9,22 256:12,12 <b>earlier</b> 26:10 28:16,23 77:9	

**[education - evidence]**

148:2 286:20,24 <b>educational</b> 250:19 260:17 <b>effect</b> 179:8 189:5 <b>effects</b> 136:12 163:13 213:18 <b>efficacy</b> 101:23 102:4 <b>efficiently</b> 199:23 221:15 <b>effort</b> 14:10 104:18 105:2 <b>eight</b> 147:3 170:18 220:6,11,16 250:24 <b>either</b> 94:13 135:2 191:18 217:18,18 226:10,17 237:6 240:7,7 241:22 252:11 257:16 287:5 <b>elaborate</b> 199:24 211:11 <b>elaborates</b> 220:17 <b>electrolysis</b> 24:6 25:5 <b>elements</b> 116:13 <b>elevated</b> 271:7 <b>elicit</b> 222:3 <b>eligible</b> 284:3 <b>elizabeth</b> 3:10 12:16 <b>ema</b> 106:19 <b>embarrassed</b> 229:23 230:16,18 231:7 279:11 <b>embarrassing</b> 230:8,12 <b>embarrassment</b> 230:22,25	<b>embedded</b> 252:18 <b>emerging</b> 243:4 <b>emphasis</b> 148:3 <b>emphasize</b> 172:5 245:24 <b>employed</b> 31:6 33:3 <b>employee</b> 21:18 22:2,6 30:11,12 31:3 289:12 <b>employees</b> 31:14 <b>employment</b> 110:20 <b>enable</b> 147:1 192:25 204:16 <b>encounter</b> 160:6 <b>encountered</b> 56:10 108:22 110:3,3 <b>encourages</b> 156:21 <b>encouraging</b> 232:24 <b>ended</b> 97:11 <b>endlessly</b> 195:20 <b>endocrinologist</b> 81:18,19 174:2 176:7 208:22 217:19 <b>endocrinologists</b> 176:5 216:20 <b>endocrinology</b> 81:22,23 <b>endorse</b> 119:18 208:12 <b>endorsed</b> 182:6 <b>ends</b> 182:25 <b>enemy</b> 247:3 <b>engage</b> 175:23 206:17 <b>engaging</b> 156:20 <b>enjoining</b> 31:7	<b>enormous</b> 85:4 100:9 148:3 183:12 <b>ensuring</b> 282:6 <b>entail</b> 94:3 <b>entailing</b> 158:3 <b>enthusiasm</b> 269:24 <b>entire</b> 25:25 90:18 144:7 145:14 <b>entirely</b> 127:22 147:20 161:1 277:24 <b>entitled</b> 238:22,24 <b>entry</b> 169:2 <b>environment</b> 85:22 <b>epidemiologic</b> 166:7 <b>epidemiology</b> 100:9 <b>episode</b> 256:10 <b>equally</b> 183:21 <b>equate</b> 32:9 159:17 <b>equivalent</b> 159:11 187:9 <b>era</b> 166:13 <b>eroticism</b> 232:13 233:7 <b>error</b> 243:5 <b>escape</b> 262:10 <b>especially</b> 228:8 232:8 <b>essentially</b> 159:10 268:20 <b>established</b> 32:21 54:4 57:24 <b>estimate</b> 24:16 25:20 86:14 87:1	<b>estrogen</b> 56:25 <b>et</b> 146:8 190:14 <b>ethical</b> 133:21 281:21 <b>ethically</b> 132:14 147:1 189:10 <b>ethics</b> 47:13 234:7 <b>european</b> 104:16 <b>evalua</b> 63:22 119:13 <b>evaluate</b> 117:22 136:8,11 <b>evaluating</b> 110:23 117:17 <b>evaluation</b> 15:23 16:1,10,24 17:5 37:18 39:15 63:22 93:16,17 116:10 116:11,17 118:20 119:13,14,16 125:19 135:25 147:11 180:14 186:15 208:13,15 209:12,18,24,25 210:7 211:8 239:21 <b>evaluations</b> 125:17,23 <b>evening</b> 58:14 <b>events</b> 145:9 147:17 156:9,10 <b>eventually</b> 16:24 26:4 29:6 109:25 204:12 237:11 <b>evidence</b> 39:25 95:14 98:20 99:6 99:7 101:13 173:13,22 204:14 207:4 212:14 240:24 241:20,22 242:4,7 255:6
---	---	---	---

**[evidence - extremely]**

268:8 276:3 281:10 282:7 <b>evidenced</b> 44:7 <b>evident</b> 156:19 <b>evil</b> 36:7 <b>evolve</b> 154:3 228:7 <b>evolving</b> 216:12 <b>exact</b> 76:13 237:12 <b>exactly</b> 66:13 238:2 <b>examination</b> 8:2 14:1 267:4 <b>examined</b> 13:23 37:16 <b>examining</b> 181:22 <b>example</b> 23:20 41:1,12 42:23 48:17 72:13,20 75:9 86:2 88:14 89:21 115:24 125:22 148:9 150:7 172:14 175:6 177:10 178:19 182:16 183:17 196:1 216:25 222:19 229:18,21 239:25 242:16 273:12,17 276:24 <b>examples</b> 23:15 44:24 <b>excellent</b> 70:18 <b>exceptions</b> 24:23 <b>excerpt</b> 256:18 279:15 <b>excerpted</b> 256:8 <b>excerpts</b> 256:8 263:2 269:18 <b>exchanging</b> 102:18	<b>excited</b> 246:12 <b>exclude</b> 162:8 <b>excluded</b> 39:5,13 40:12 41:13,24 159:9 161:17 162:20 170:24 <b>excluding</b> 158:15 161:11 249:2 <b>exclusion</b> 154:18 208:8 254:2 <b>exclusions</b> 41:19 <b>excuse</b> 142:18 <b>executed</b> 288:10 <b>exhi</b> 65:17 <b>exhibit</b> 8:11,16,19 8:22,24 9:1,3,5,7,9 9:11,13,15,17,19 9:21,23,25 10:2,4 50:20,20 51:2 63:4,8 64:4 69:18 69:24 70:2 164:18 165:25 217:22,25 256:20,21 258:9 258:11 260:13,14 261:20,21 262:21 263:10,11 265:10 265:11 266:25 267:1,20,22 268:24,25 269:12 269:13 270:7,8 271:1,2 272:16,18 275:2,4 278:2,4,22 278:23 279:16,18 282:16 <b>exhibits</b> 8:9 63:4 217:22 <b>exist</b> 99:20 176:25 <b>existed</b> 225:10 <b>exists</b> 113:21 166:7	<b>expect</b> 154:23 223:18 <b>expected</b> 90:11 <b>experience</b> 55:24 74:11 83:16 123:5 128:18,20 139:21 154:18 155:9 159:21,22 160:1 173:1 196:21 197:5,5 236:14 243:22 245:22 246:1,2 252:23 260:17 262:1 264:7 <b>experiences</b> 84:10 129:22 130:2 199:4 200:3 <b>experiencing</b> 130:23 223:13 231:19 240:1 <b>experiment</b> 232:9 <b>experimental</b> 194:25 <b>expert</b> 8:11 32:1,2 38:16 42:1,10,13 49:24 51:20 56:7 56:18,24 57:1 58:22 59:16,24 61:1,10,15,22,22 63:9,13 64:6,8 66:10 68:24 70:3 70:13 79:20 81:22 81:23,24,25 82:1 124:2 148:2 163:17,22,24 164:1,3 170:12 185:10 186:4,7,10 187:25 199:20 253:11 254:15 257:21 279:21,22 280:10,13,14,20	280:22,25 281:14 282:11,14 <b>expertise</b> 33:5 41:20 80:15 147:6 152:7,11 186:1 285:4 <b>experts</b> 50:12 69:9 100:8,14 189:15 264:14 280:3 <b>explain</b> 19:8 241:3 <b>explained</b> 114:13 123:3 252:1 <b>explaining</b> 31:18 <b>explanation</b> 160:25 <b>exploration</b> 63:20 186:16 <b>exposing</b> 234:18 <b>expressed</b> 30:6 232:24 254:8 <b>expressing</b> 233:2 <b>expression</b> 205:11 221:8 <b>extend</b> 176:12 <b>extended</b> 31:24 180:13 186:15 208:13,15,24 209:12,23 210:7 211:8 <b>extending</b> 33:6 <b>extensive</b> 83:16 138:4 <b>extent</b> 105:5 109:4 146:19 154:1 167:15 186:1 227:8,9 253:1 282:4 <b>extremely</b> 39:20
---	---	---	--

**[f - first]**

<b>f</b>	<b>familiar</b> 73:4 112:12 113:19 143:11	219:2 230:22,25 231:1 236:18 239:7 280:25 283:15,16	<b>fifth</b> 103:2,4 185:20 202:12 266:10
<b>f</b> 37:24	<b>familiarity</b> 188:1	<b>feeling</b> 231:5	<b>figure</b> 37:2 81:6
<b>face</b> 141:9 189:17	<b>families</b> 100:16,24 238:11	<b>feelings</b> 159:22 180:2 200:11 215:21 222:3 231:8	129:22 137:1,6 141:21 150:17 167:14 191:10 204:1
<b>facilitated</b> 230:20	<b>family</b> 235:22 238:7 239:10,19 239:21 243:10 249:16 250:6 258:16 279:3	<b>feels</b> 68:21 155:12	<b>figured</b> 138:17
<b>facility</b> 29:2,8	<b>family's</b> 109:22 203:22 238:14	<b>felt</b> 31:25 34:23 38:16 97:19 99:5 231:18	<b>filed</b> 11:13 193:5,5 252:13
<b>fact</b> 14:15 29:5 32:8 40:4 80:5 99:11 112:7 131:9 137:9,9 177:7 187:11 188:24 189:17 191:17 199:13 200:25 206:4 208:19 238:10 240:25 242:23 248:10 258:14 262:1 275:22 284:13 285:8	<b>famous</b> 271:15 <b>fantasies</b> 233:8 <b>fantasy</b> 199:15 221:11	<b>female</b> 16:5 23:6,7 25:6,8 26:14,16 29:2,8 38:13 39:19 49:5,12 129:12 142:21,22 145:7 147:15 149:12,12 150:24 193:6,12,22 194:5 204:19,20 262:3 271:17 278:8	<b>files</b> 256:8 <b>filibuster</b> 238:25 <b>filibustering</b> 239:1
<b>factors</b> 183:13 200:9,10 279:2	<b>far</b> 42:18,19 101:4 102:3 124:13 128:24 137:13 161:7 175:12 244:1,2 249:18	<b>femaleness</b> 223:2	<b>film</b> 78:5
<b>facts</b> 74:8,24,25 75:2,4,5 224:16 240:23 255:10,11 255:12 264:1	<b>fashion</b> 37:9 <b>fashions</b> 102:2	<b>females</b> 223:23 232:13	<b>final</b> 282:13
<b>failed</b> 139:9 190:8 259:1	<b>fat</b> 277:5	<b>feminine</b> 223:21	<b>finances</b> 106:21
<b>failure</b> 175:16,24	<b>father</b> 34:17 85:17	<b>femininity</b> 277:24	<b>financially</b> 11:21 289:11
<b>faint</b> 63:2	<b>father's</b> 169:12	<b>ferguson</b> 63:14	<b>find</b> 44:8 50:17 60:23 68:10 101:19 120:12,16 124:3 165:17,20 178:22 202:18 203:10 225:21,23 226:6 229:15 230:11 234:11 243:16 244:20 246:22 252:16 276:23
<b>fair</b> 31:22 42:24 53:18 55:12 68:20 69:12 103:12 115:22 131:1 137:4 146:2 179:20 182:21 190:4,4 198:14 208:7 221:21 227:22 237:21	<b>favor</b> 22:23 23:2 23:15 33:6	<b>fertilization</b> 54:21	<b>fine</b> 29:25 83:18 91:16 106:23 207:9 208:19
<b>fairness</b> 151:24	<b>fear</b> 240:14	<b>fertilize</b> 54:17	<b>finish</b> 148:25 238:23 239:4,8
<b>faith</b> 270:19	<b>february</b> 70:4,21	<b>fervent</b> 277:15	<b>finished</b> 94:7 239:8
<b>false</b> 74:3,3	<b>feedback</b> 210:2	<b>fetish</b> 236:8,12 237:8	<b>finland</b> 103:21
	<b>feel</b> 20:10 32:4 42:15 69:12 81:14 94:10,17 109:10 115:1 125:8 138:20 144:16 145:15 147:6 163:23 164:5,19 176:22 187:3	<b>fetishistic</b> 225:9	<b>firm</b> 14:19 115:25
		<b>fewer</b> 244:24	<b>first</b> 29:1 37:23 52:19 56:10 65:9
		<b>field</b> 42:11 75:8 80:5 179:10 188:20 194:11 280:13,20	



**[first - futures]**

68:24 70:16 71:1 78:14 108:21,22 110:2 129:4 164:7 167:24 171:9 183:7 192:20 197:13,22 205:6 213:1 217:2 229:13 234:6 236:2 237:5 239:21 243:1 279:13 283:25 <b>fit</b> 60:25 91:23 143:22 <b>fits</b> 156:14 <b>five</b> 28:12 84:22 121:9 136:15 153:19,20 166:16 173:16 176:12 217:4 <b>fixed</b> 241:16 242:7 281:9 <b>flashing</b> 64:18 171:7 187:20 <b>flip</b> 184:8 203:9 212:18 <b>flipping</b> 93:1 <b>floor</b> 3:14 4:9 81:4 102:9,11,20 103:10,11 <b>florida</b> 22:4,9 31:2 32:24 52:24 53:3 53:7,24 54:2 55:21 170:24 <b>focus</b> 85:21 126:4 137:23 172:23 277:2 <b>focused</b> 144:16 188:17 <b>focusing</b> 44:23 <b>folder</b> 50:23,23 69:19 217:22	<b>follow</b> 37:1 38:20 39:2 90:24 94:5 109:21 129:17,24 129:25 131:6,7,22 133:3 135:20 146:15,15 162:15 174:4,6,8 175:4,6 175:16,17,23,25 176:11 177:2,7,13 177:14,15,17,21 177:23 178:16,18 179:6 189:8 203:19 208:4,7 212:4 268:1,12 270:16,21 <b>followed</b> 39:23 174:12 176:20,23 284:12 <b>following</b> 156:18 <b>follows</b> 13:24 146:12 176:1,14 198:22 <b>force</b> 154:24 <b>forces</b> 274:3 <b>foregoing</b> 288:5 289:3,5,9 <b>forensic</b> 69:3 <b>forget</b> 277:1 <b>forgot</b> 89:19 113:8 113:11,18 <b>form</b> 14:8,10 37:11 48:22 54:10 153:2 213:19 224:8 225:7 <b>formal</b> 50:11 <b>formality</b> 260:7 <b>formally</b> 84:1 <b>formation</b> 114:3 <b>formed</b> 266:10 <b>forms</b> 148:4	<b>formulation</b> 227:17 <b>forth</b> 69:10 148:13 176:13 181:5 182:3 192:14 200:11 202:6 223:25 234:23 236:1 273:2 278:1 284:25 289:4 <b>forward</b> 75:2 93:1 104:19 158:11 171:7 212:18,19 218:15 <b>found</b> 83:3,3 135:25 <b>foundation</b> 247:10 249:7 <b>founded</b> 110:15 <b>four</b> 88:15,15 121:9 123:18 166:7,16,25 180:19 181:2 192:5 201:10,25 203:3 208:3 209:19 210:8 211:16 217:4,12 258:23 <b>fourth</b> 152:5 192:9 <b>fragmentary</b> 218:24 <b>france</b> 103:21 <b>frankly</b> 65:10 <b>free</b> 16:11 144:16 145:15 164:5,19 219:2 283:15 <b>freedom</b> 4:16 13:14 52:3,8,12,17 53:1,20 <b>frequency</b> 244:22 <b>frequently</b> 112:23 118:21	<b>friend</b> 1:5 2:6 11:12 21:6 <b>friends</b> 245:12 <b>friendships</b> 235:22 245:9 246:6 <b>front</b> 144:8 <b>froze</b> 178:7,12 <b>frustration</b> 181:13 236:15 <b>frustrations</b> 160:7 <b>fuddy</b> 264:2 <b>fulfilling</b> 243:9 282:7 <b>full</b> 87:25 88:2 110:20 263:2,6 <b>fully</b> 214:4 253:16 253:18 <b>function</b> 129:1 131:20 213:25 <b>functional</b> 173:5,8 173:25 188:18 189:16 244:5 <b>fundamental</b> 146:12,18,24 <b>fundamentals</b> 130:13 <b>funding</b> 106:2 <b>funny</b> 266:16 <b>further</b> 16:24 76:17 77:12 144:24 286:8,9 289:9,11 <b>future</b> 96:10,11 105:10 123:25 160:7,13 208:18 222:6 228:8 240:15 <b>futures</b> 180:3
---	---	---	--

**[gamete - going]**

<b>g</b>	170:2 190:18,22 191:6 208:24 234:16 246:19	153:21 154:15 158:16,16,18,21 162:19 163:14,18 204:20 224:4 249:14 275:7,23 276:11	128:8 139:22 155:4 163:17 176:17 180:9 218:8 240:20 274:2 285:12
<b>gamete</b> 25:14			<b>glad</b> 235:9
<b>gay</b> 224:17 226:10 226:17 227:18 232:17 233:20	<b>general's</b> 13:11 <b>generality</b> 36:13 <b>generally</b> 27:21 94:24 96:4 142:16 142:17 159:21 245:13	<b>give</b> 20:8,13 22:13 35:18,18,21 47:11 55:4 76:12,13 77:18,20 87:1 88:13,22 89:20 100:19 116:4 121:22 122:16,18 133:4 139:5 155:11,15 158:6 166:17 182:16 184:14 195:16 205:23 210:1,1 217:11 220:5,10 220:12 237:11 242:4 248:6,14 261:15 263:25 269:18 274:7 277:6	<b>glance</b> 102:19 <b>go</b> 11:7 63:3 65:1 75:14 98:23,25 108:13 112:21 118:9 131:14 138:16 144:24 155:19 156:11 157:22 164:3,4 179:23 187:22 188:23 192:18 195:5 201:9 202:6 202:13 203:22 205:21 207:23 212:19 216:16 217:14,15,16 230:23 257:22 268:9 285:23,25
<b>gender</b> 19:11,17 21:8 22:21,24 23:3,16,19,21 24:1 24:20 25:12 26:20 27:6 28:3 30:12 33:7 35:15 36:2 37:21 81:2 98:21 100:11,11 103:14 108:23 110:5,16 110:19 111:2,7 113:2,20 117:12 118:1 119:1 122:1 124:2 125:20 126:18 130:23 133:10 145:5,7 147:15 150:20 151:15 153:15 154:2 158:9 159:10 161:17 162:9,21 165:2,6 166:3,6 171:2 174:10 180:9 188:3 193:1 194:25 198:7 209:3 221:3,5,8 223:14 224:3,4 228:5,6 232:25 233:25 240:2 242:7 245:3,3 251:5,19 252:14 256:10 258:15 262:7 272:5,7 273:1,8,15 274:20	<b>genesis</b> 53:17 <b>genetically</b> 204:17 204:20 281:8 <b>genital</b> 39:20 133:13 180:10 <b>genitals</b> 196:17 <b>genspect</b> 122:20 <b>gentlemen</b> 74:20 <b>genuine</b> 236:20 <b>genuinely</b> 253:21 <b>germane</b> 174:15 <b>gesture</b> 36:6 <b>getting</b> 100:21 127:13,14 142:18 143:18 164:9 182:24 192:16 215:20,21 221:25 <b>girl</b> 34:18 142:7,12 150:8,9 151:4,8,8 151:9,14,17,18,22 153:14,14,16,18 153:19,22 154:8,8 154:9,17,23,23 163:19 249:3,13 250:3,14 <b>girl's</b> 151:5,14 277:8 <b>girlfriend</b> 139:14 <b>girls</b> 142:15,17,17 143:3 145:8 147:16 151:18,25 151:25 152:3,4	<b>given</b> 22:16 24:17 26:24,25 30:10 36:16,20 37:4,8,19 42:6 43:4,7,15 44:23 45:12 46:2 46:9 48:7 75:2 78:1 82:16 89:21 94:17 96:17 115:25 116:24 131:9 132:7 135:21 140:4 175:7,9 206:14 233:10 263:5 287:12 <b>giving</b> 16:18 21:19 21:25 22:4 43:22 48:5 70:12 88:19	<b>goal</b> 221:3,4,8,17 221:18 222:18,20 222:21 <b>goes</b> 63:8 77:4 96:20 182:23 183:6 <b>going</b> 14:5 18:15 19:8 36:9 38:25 48:12 50:19 57:4 59:5 61:13 65:23 90:7 94:5,12 104:19,25 108:14 112:24 113:6,6 123:2 125:5 130:19 131:16 136:16 137:18 144:15,25 145:13 147:8 152:10,15



**[going - harmful]**

158:10 162:9 164:3,7 170:10 173:8 178:3 179:17 180:4 184:1,18,23 189:5 195:8 196:7 201:17 204:2,2 205:6,14 211:11 212:19 213:7 222:1 228:7 233:5 240:17,20 249:11 256:6,17 262:22 263:1 271:14 273:7 282:19,19 <b>good</b> 12:2,7,9,11 12:13,15,19,23,25 14:3,4 29:17 105:19 107:13,25 117:24 128:11,12 128:15,15,16 148:21 277:11 <b>gotten</b> 148:1 <b>governors</b> 135:1 135:11 <b>grade</b> 145:3,22 <b>graduate</b> 74:19 88:9 <b>grand</b> 88:20 114:1 <b>grandchild</b> 129:7 <b>granddaughter</b> 128:23 <b>grandfathered</b> 79:4 <b>grandfathers</b> 239:17 <b>grandiose</b> 133:1 <b>grandmother</b> 128:22 <b>grandmothers</b> 129:6 239:17	<b>grandparent</b> 129:2 <b>grata</b> 38:7 <b>great</b> 108:19 111:18 112:3 156:17 200:24 207:24 229:10 252:17 <b>greatly</b> 243:19 <b>green</b> 7:6 266:6 <b>grips</b> 221:10 233:12 234:20 276:21 <b>grossly</b> 271:20,21 272:5,7 <b>ground</b> 17:17,19 81:3 102:9,11,20 103:9,11 <b>group</b> 25:4 95:13 103:3 107:2 121:21 122:2,11 122:19,20,22 190:23,25 192:10 211:15 234:25 246:3 255:20 265:16 266:4 <b>groups</b> 120:11,12 148:2 192:5,6 212:4 <b>grow</b> 149:23 <b>growing</b> 80:2 220:13 <b>grownup</b> 239:15 <b>growth</b> 214:10,11 <b>guaran</b> 177:1 <b>guarantee</b> 19:4 162:10 <b>guardian</b> 45:21 <b>guess</b> 16:19 45:22 46:17 49:14 52:17 53:18 60:20 61:6	63:21 64:17 72:3 72:9 97:25 99:10 99:14 124:19 126:8 150:4 151:2 153:24 161:9 197:4 198:14 211:7 219:17 235:20 241:3 253:18 277:20 284:11 285:7 <b>guessing</b> 142:4 <b>guidance</b> 85:21,21 86:1 <b>guidelines</b> 103:13 103:16,20 104:1,7 104:9,13,15,19,25 105:10,11 284:15 284:17 <b>guilty</b> 262:1,11 <b>gun</b> 257:15 <b>gyne</b> 225:17	153:20 154:6 266:22 <b>happening</b> 104:10 124:11,16 137:9 169:6,6 215:5 <b>happens</b> 78:6,7,7 173:17 175:1 229:5 <b>happier</b> 128:24 136:3 <b>happily</b> 190:9,10 <b>happiness</b> 173:15 <b>happy</b> 18:7 29:24 33:11 139:25 172:8 173:4,5,8,11 173:25 179:17 188:17,18 189:16 230:3 233:20 236:22 239:4 254:5 274:5 281:10 <b>hard</b> 55:1 79:25 85:13 144:6 155:10 181:11 202:4 222:22,25 231:14 233:10 <b>harder</b> 232:18 <b>harm</b> 148:8 149:25 150:2,2 153:25 154:12,13 161:18 162:2,3,10 162:15 163:18 181:8,12,16,20,23 182:13 183:3 224:10,11,12 234:7 235:22 240:20 276:7 <b>harmed</b> 162:13,14 240:21 267:17 <b>harmful</b> 153:15,17 186:5 276:21
		<b>h</b>	
		<b>h</b> 15:1 190:14 197:23 213:4,8 256:12 <b>h.b.</b> 143:13 157:5 157:8 <b>half</b> 38:18 68:12 99:4 113:7 139:3 <b>halftime</b> 257:13 <b>hamilton</b> 37:25 <b>hand</b> 69:8 176:9 <b>handful</b> 24:22 87:4 <b>hanging</b> 273:6,14 274:20 <b>hap</b> 78:6 <b>happen</b> 42:20,20 150:24 <b>happened</b> 17:6 56:5 112:8 122:19	

**[harming - helpful]**

<b>harming</b> 179:19 179:21 180:3 235:1,3	119:8,23 120:5 128:10 142:1 143:19 144:1,9 145:15,18 147:13 148:22 149:1,2 150:15 152:6,23 153:6,9 155:12,19 155:25 156:1,16 157:21 159:3,19 162:18 163:5,10 163:20 164:11,12 165:17 166:1 169:24 170:9 171:6 175:20,21 178:2,6,12,15 181:1 183:15,24 184:6,16,18,20 185:5 187:5 188:20 192:7 193:16 196:13,14 197:7 198:5 201:4 201:12,14,22,24 202:22,24 203:2 203:15,17 206:13 206:21 207:9,13 207:19,24 208:1 213:5,6,23 217:21 218:3,19 219:2,16 219:22,24 220:25 221:1 224:20 226:14,23 227:16 228:18 231:2,11 231:16 232:22 235:17 238:17,20 238:24 239:3,24 241:2,19 242:2 243:13 244:14 247:4,14,21,24 249:10,20 250:1 251:1,14 252:3,5 252:10 253:9,20	254:18,25 255:1 256:19 257:3,8,17 258:2,8,10 259:4 259:12 260:12 261:19 262:14,20 263:3,9 264:19 265:1,9,19 266:24 267:8,19 268:2,10 268:23 269:7,11 269:16,19 270:2,6 270:22,25 272:1 272:16 273:9 275:2,12 278:2,13 278:21 279:9,16 280:5 282:18,22 282:25 283:5,10 283:19 285:6,23 286:7,11 287:8	<b>healthy</b> 173:5,25 188:17,18 189:16 <b>hear</b> 14:20 16:13 21:21 43:12 73:6 84:20 96:24 113:9 118:17 140:13 153:7 163:14 167:6,7,8 169:21 178:8,10,11 187:10 202:6 217:1,3 219:12 233:20 244:12 257:1,3,7,17 <b>heard</b> 39:1 127:16 127:16,25 128:2 129:5,5,9 142:22 226:9 238:11 239:9 250:9 265:5 273:25 274:10 <b>hearing</b> 226:12 231:14 236:24 239:12 256:23 <b>heart</b> 190:20 192:13 214:11 <b>heather</b> 1:6 2:6 5:15 11:12 <b>hecox</b> 41:18 42:10 251:4,19 253:11 <b>held</b> 74:14 <b>hello</b> 12:17 <b>help</b> 26:6 54:20 96:7 100:23 117:18 118:18 183:8 222:4,4 251:2 267:6 276:19,20,23 <b>helped</b> 86:5 <b>helpful</b> 45:15 75:13 107:12 226:6
--	--	---	---

**[helping - identify]**

<b>helping</b> 103:13 180:2 281:9,10 <b>helps</b> 207:3 <b>helstrom</b> 3:11 12:17,17 <b>hereto</b> 51:3 69:25 218:1 256:22 258:12 260:15 261:22 263:12 265:12 267:2,23 269:1,14 270:9 271:3 272:19 275:5 278:5,24 279:19 288:7 <b>heroin</b> 139:11,17 139:18 <b>hesitance</b> 157:17 <b>hesitating</b> 15:25 17:2 23:17 24:3 26:21 27:19 43:18 94:4 95:16 <b>heterosexual</b> 224:2,7 232:5,11 233:23 <b>hi</b> 255:2 <b>high</b> 122:10,12 147:23 149:14,15 173:5 <b>higher</b> 183:17 184:1,9,22 185:2 187:11,14 190:18 190:19,20,22 192:14 <b>highlight</b> 168:11 <b>highly</b> 93:11 107:21 173:25 188:18 258:20 264:5 <b>hire</b> 48:4 <b>hired</b> 33:10 34:16 36:4 99:12	<b>histories</b> 44:6 100:1 244:4 277:10 <b>history</b> 16:1,2 40:5,5 44:5 101:19 116:18 204:3,3 273:24 274:2,24,25 <b>hit</b> 201:15 <b>hiv</b> 192:14 <b>hold</b> 25:1 81:21 221:17,18 233:25 <b>home</b> 109:22 <b>homosexual</b> 223:19,22 224:5,7 232:6 <b>homosexuality</b> 233:2,6 234:3,5 242:13 <b>honestly</b> 181:22 <b>honor</b> 88:21 <b>hope</b> 31:9 72:2 173:7 220:22 244:16,23 245:1,5 245:5 256:5 <b>hopefully</b> 282:13 286:1 <b>hoping</b> 105:9 188:21 <b>hormonal</b> 192:24 194:24 <b>hormone</b> 24:6,10 25:9,10 139:5 175:8 217:15 <b>hormones</b> 23:21 82:14,16 93:17 115:25 116:8 138:2,8,11 139:5,8 139:20,23 140:4 140:20 141:14 180:9 181:14	182:19,25 209:7 210:13,15,17,17 210:24,25 211:1 217:14 224:14 266:1,2,5,12 278:1 <b>horrified</b> 118:7 121:11,13 240:3 <b>hospital</b> 36:6 38:8 38:17 62:24 258:25 <b>hospitalization</b> 38:7,10 <b>hospitalized</b> 36:5 <b>hospitals</b> 112:13 112:15,17,22,25 113:13,20 114:8 118:1,25 190:21 <b>hour</b> 18:16 51:7,7 88:15,15 91:15 113:7 115:24 117:23 121:11 123:7,10,13 128:1 209:17 210:13 211:1 <b>hourly</b> 207:8 <b>hours</b> 71:7,7 123:9 194:14 209:15,19 210:8 211:16 <b>housekeeping</b> 14:6 <b>houses</b> 83:19 <b>housing</b> 250:19 <b>hover</b> 144:3 <b>https</b> 256:10 <b>huh</b> 107:23 <b>human</b> 97:23 121:23 161:25 162:6,7,16 173:8 200:8,8 233:15 257:21 <b>humans</b> 196:17	<b>humble</b> 132:22 <b>humbly</b> 74:6 <b>hundred</b> 106:4 128:6 177:15 270:19 <b>hundreds</b> 285:20 <b>hurricane</b> 4:20 <b>hutchens</b> 5:15
			<b>i</b>
			<b>idea</b> 29:15,16,17 29:24 31:8 73:16 73:16 74:2 131:2 134:5 150:22 151:7 183:11 190:9 206:10 217:11,17 225:13 225:14 226:25 227:21 244:23 269:5 277:17 <b>ideal</b> 136:11 <b>ideas</b> 88:17 202:5 242:11 282:2 <b>identification</b> 51:2 69:24 204:17,19 217:25 256:21 258:11 260:14 261:21 263:11 265:11 267:1,22 268:25 269:13 270:8 271:2 272:18 275:4 276:5,6 278:4,23 279:18 <b>identifications</b> 203:25 <b>identified</b> 273:1 <b>identifies</b> 26:14 150:8 151:4 <b>identify</b> 150:10,20 150:23 157:15 158:10 167:19

**[identifying - initially]**

<b>identifying</b> 16:19 35:21 38:5 58:24 109:7 193:6,12,22 194:5 227:18 276:14 <b>identities</b> 278:10 <b>identity</b> 16:3,4,5,6 19:11,17 21:8 23:19 24:21,25 110:16,19 111:3,7 121:23 122:1 145:7 147:16 150:20,25 151:15 153:15 154:1,3 155:4 158:9 159:10 161:18 162:9,21 198:8 199:18 205:11 206:6 222:9 227:10,12 228:5,7 228:13 232:4,5,6 233:1,25 234:2 235:21 242:7 251:5,5,20 252:15 278:7,11 <b>ideology</b> 135:6 <b>ignoring</b> 100:22 <b>illusion</b> 134:19 <b>illustration</b> 229:7 <b>imagine</b> 43:22 44:1 150:23 165:21 176:8,13 179:25 <b>imagined</b> 262:9 <b>immediate</b> 29:19 205:17 206:9,22 266:8 <b>immediately</b> 135:22 205:12,15 <b>impact</b> 40:14 136:8 158:13	172:19 195:24 215:8,9,17 <b>implant</b> 217:3 <b>implication</b> 179:10,11 187:13 274:22 <b>implications</b> 35:5 116:21 154:12,16 157:24 172:15,15 <b>implied</b> 66:20 <b>importance</b> 118:19 124:8 <b>important</b> 99:10 101:25 117:7 128:11,12 <b>imprecise</b> 196:18 <b>impressed</b> 74:7 118:15 <b>impression</b> 123:21 137:15 206:1 <b>impressionistic</b> 244:9 <b>improve</b> 85:22 244:24 <b>improved</b> 245:2 <b>improves</b> 244:17 <b>inability</b> 74:7 120:16 234:14 <b>inadequate</b> 116:9 119:13 <b>inauthenticity</b> 229:12 <b>incidence</b> 165:2 <b>incidents</b> 122:12 <b>include</b> 26:22 156:23 163:19 170:14 191:8 <b>included</b> 97:22 168:25 169:2 <b>includes</b> 23:17,20 26:22 118:20	133:5 <b>including</b> 62:4,8 116:18 206:4 253:8 <b>inclusive</b> 148:15 <b>incompatibility</b> 223:5 <b>incongruence</b> 26:7 <b>incorrect</b> 30:14,15 49:4 <b>incorrectly</b> 115:20 <b>increase</b> 100:6 149:20 <b>increased</b> 165:3 192:12 <b>increasingly</b> 109:17 260:20 <b>independent</b> 266:4 <b>indeterminant</b> 154:19 187:15,17 <b>index</b> 8:1 <b>indicate</b> 126:24 <b>indicated</b> 27:8 82:5 131:19 <b>indicates</b> 72:23 <b>indicating</b> 158:7 175:24 <b>individual</b> 16:10 26:5,25 27:1,3 151:22 195:2 203:22 <b>individuals</b> 101:20 110:23 192:25 193:7,13,24 204:8 204:8 243:16,17 245:10,12,16,22 266:4 <b>indoctrination</b> 81:14,16 <b>industry</b> 32:1	<b>ineffective</b> 160:9 <b>influence</b> 54:13 56:3 84:9 101:25 105:9,10 124:1 131:12 134:15 199:13 <b>influenced</b> 40:16 54:24 55:20 56:2 148:7 173:10 <b>influences</b> 54:25 55:2 202:7 <b>inform</b> 30:19 48:2 59:24 189:11 279:4 <b>information</b> 16:16 35:21 36:15 42:15 42:21 60:23 109:7 128:13 130:24 133:3 135:6 148:1 175:13 259:20 261:16 <b>informative</b> 45:16 <b>informed</b> 43:19,20 60:7,8 95:12 105:6,7 107:6 116:13,19,25 117:2,11 132:16 134:17 135:3 169:18 205:25 211:19 221:5 235:6,8 248:1 <b>informer</b> 117:20 <b>informing</b> 33:25 100:21 117:17 174:23 <b>inhabit</b> 232:25 <b>initial</b> 62:4 84:6 208:11 214:2 <b>initialed</b> 288:7 <b>initially</b> 51:23 159:1
---	--	---	--

**[injunction - johnson]**

<b>injunction</b> 8:14 64:9 65:20,25 66:7,10,19 67:8,16 67:19,24,25 213:15 <b>injury</b> 261:5,11 <b>ink</b> 288:7 <b>innate</b> 234:1 <b>inquire</b> 40:8 <b>insel</b> 79:21 <b>insisting</b> 177:2 <b>insofar</b> 57:22 <b>instance</b> 277:16 <b>instances</b> 23:1 <b>institution</b> 93:10 <b>institutions</b> 52:6 93:11 113:4 <b>instruct</b> 57:4,14 59:5 94:13 <b>instructed</b> 18:2 <b>instruction</b> 59:13 <b>instructs</b> 17:22 <b>insufficient</b> 31:25 <b>insulting</b> 281:6 <b>insurance</b> 32:1,11 41:3 85:16 <b>integral</b> 99:9 <b>intellectually</b> 54:22 <b>intelligence</b> 122:10 <b>intense</b> 209:25 210:7 <b>interact</b> 200:9 <b>interacting</b> 245:15 <b>interaction</b> 113:25 <b>interactions</b> 126:25 204:4 <b>interest</b> 97:24 98:8 100:14 226:1,2	<b>interested</b> 11:21 26:5 74:12 79:18 80:3 83:15 97:8,9 97:23,25 99:6 100:11,23 104:14 114:22 115:2,13 115:16 222:24 237:14 259:21 289:12 <b>interests</b> 199:18 <b>interfere</b> 141:15 <b>interfering</b> 215:4 234:14 <b>intern</b> 82:14,18 <b>internal</b> 225:4 <b>internalized</b> 161:5 <b>international</b> 102:21 136:10 <b>internet</b> 246:8,10 <b>internship</b> 263:15 <b>interplay</b> 54:13 <b>interpret</b> 252:20 <b>interpreted</b> 252:21 255:11 <b>interrupt</b> 36:9 104:3,4 <b>intervals</b> 212:5 <b>intervening</b> 183:13 <b>intervenor</b> 1:17 2:18 4:15 13:14 286:13 <b>intervention</b> 27:24 28:9,11 149:6 157:1 180:5 <b>interventions</b> 180:15 189:1 191:25 194:24 212:3 <b>interview</b> 129:9	<b>interviewed</b> 17:7 29:17 <b>intimate</b> 243:18 245:4 <b>introduce</b> 12:5 50:19 51:9 69:18 <b>introduced</b> 164:18 <b>introduction</b> 17:16 75:6,20 258:18,18 262:2 <b>invasive</b> 212:3 <b>inventing</b> 182:7 <b>invested</b> 261:4,11 <b>investigate</b> 170:4 204:11 259:2 <b>investigated</b> 83:3 <b>investigating</b> 143:10 <b>investigation</b> 170:2 <b>invite</b> 88:22 114:18 <b>invited</b> 39:16 77:20 89:20 93:2 121:21 122:16,18 <b>involve</b> 44:11,14 199:4 200:3,5 234:6,8 <b>involved</b> 23:22 69:1 84:25 104:22 105:24 121:10 169:5 170:11 220:14 285:2 <b>involvement</b> 65:6 116:19 168:16 <b>involves</b> 23:18 25:25 42:3 85:21 <b>involving</b> 15:14 22:20 23:4 37:20 41:2,10 43:16 45:14 46:2 63:23	<b>ireland</b> 125:1 <b>irrelevant</b> 226:4 <b>isolation</b> 239:11 244:19 246:5 <b>issue</b> 20:24 29:5 32:19 33:10 38:24 43:23 96:8 145:25 146:17,18,22,24 147:22 148:16 163:13 207:5 227:20,23 246:19 261:25 274:18 280:11 <b>issued</b> 103:15 <b>issues</b> 32:15 41:10 42:17 60:3,18 93:8 96:12 105:11 113:16,17 132:12 160:2,5 174:14 187:16,17 191:17 199:15,17 <b>italics</b> 172:10 <b>item</b> 24:7 25:5 <b>items</b> 23:20 25:6,7 <b>j</b> <b>j</b> 190:14 <b>jackson</b> 1:6 2:6 11:12 <b>janssen</b> 62:19,21 <b>january</b> 37:23 77:23,24 78:2 255:13 256:12,15 273:24 <b>jazz</b> 271:16,18 272:4,10,14,15 <b>jennings</b> 271:16 271:18 272:4,10 272:14,15 <b>job</b> 1:24 <b>johnson</b> 6:5 13:1
---	---	--	--

**[johnson.com - know]**

<b>johnson.com</b> 6:11	<b>kagay</b> 1:23 2:24	262:12	125:16 126:6
<b>joined</b> 25:4,16	11:19 289:20	<b>kinds</b> 60:18	128:7 129:19
102:22	<b>kang</b> 3:5 12:11,11	220:14	131:4,5,10,11,11
<b>joke</b> 75:12 78:25	<b>katelyn</b> 3:5 12:11	<b>kkang</b> 3:17	131:15,18 132:7
<b>josh</b> 12:23 207:20	<b>kathleen</b> 3:8 12:2	<b>kmorgan</b> 5:23	132:12,21 133:1
<b>joy</b> 258:22	14:18	<b>knew</b> 30:19,21	133:19,20,21
<b>judge</b> 29:1 39:18	<b>keep</b> 38:17 217:12	34:23 121:23	134:16,17,20,20
39:21,21 40:8,15	<b>keeping</b> 104:9	211:2 225:21	134:21 136:6
40:22 41:3,20	196:5	<b>know</b> 14:13,22	137:13 139:13,17
58:3 168:14,14,23	<b>kelly</b> 5:18 13:4	15:16 16:18 17:19	140:7 141:14
<b>judge's</b> 168:14	286:19	18:7,17 20:15,20	142:5,7,8 144:2
<b>judges</b> 40:3,3	<b>ken</b> 90:10,20	27:16 30:20 31:11	145:19,21,23,25
134:24,25 135:12	<b>keohane</b> 22:8	32:20 35:17,19	146:13 147:2,11
<b>judgment</b> 208:20	<b>kept</b> 114:11,12	37:16 38:13,21	147:21,23 149:22
281:15,20	<b>key</b> 45:1 46:17	39:1 40:7 41:10	150:24 151:11
<b>judicial</b> 32:15,15	213:3	42:13,15,18,21	153:4 154:2,11,16
38:23 46:1,8	<b>khartnett</b> 3:20	43:24 46:18 47:11	155:8 156:13
47:22 48:9 49:1	<b>kid</b> 124:2,5 132:21	54:12,24 55:19,22	157:5,8,10,16
49:17 50:9	217:11 273:12	59:9 60:11,17	158:22 159:13,15
<b>julie</b> 3:9 12:9	<b>kids</b> 100:23	61:21 63:16 64:3	159:17 160:14
<b>july</b> 108:24 110:1	118:22,23 126:3,4	64:12 66:18,19	163:20 165:12
<b>jumped</b> 29:16	157:6,9 166:16,17	67:18 68:1,10	168:21 169:10
<b>june</b> 78:20	176:4,8,9 235:7	74:1,16 76:12	170:7,17 172:18
<b>junior</b> 149:15	238:12,12 271:13	77:15,18 78:4,5,7	173:15 174:7,9,11
<b>juries</b> 134:24	273:4	78:10,15 84:21	175:1,9,12 179:5,7
<b>jurisdiction</b> 20:20	<b>kill</b> 257:16 258:15	85:14,19,24 88:17	179:9,10,11,15,16
<b>jurisdictions</b>	<b>killed</b> 257:25	89:7 90:14 91:18	179:16,18 181:7
169:7	258:23	92:11 93:19,23	181:10 182:3,14
<b>jury</b> 169:12	<b>kimberlee</b> 7:19	94:10,18 95:1,3,16	183:9,19 184:13
<b>justification</b> 186:9	11:17	95:21 96:18,22	187:23 188:16,24
186:12 206:9	<b>kind</b> 23:22 27:8	98:14,17 99:8	190:14 191:22
214:2	28:9,11 43:4	100:5 101:4,18	192:11,17 193:25
<b>justified</b> 38:16	53:16 69:12 71:9	103:11,15,21	194:1,3,13,18
82:23 83:4 216:1	94:16 102:9 107:3	106:2,9,11 107:12	196:24 200:6
<b>justify</b> 28:9	111:8 114:24	107:17 113:11	201:7,8 202:3,5
<b>juvenile</b> 37:10	116:23 119:20	114:14,15,15,16	203:3 208:19,19
<b>jveroff</b> 3:21	130:9 135:19	115:11 117:10,22	208:21 209:19
<b>k</b>	137:7,7 169:9	118:2,3,3,3,4,11	213:2 215:16
<b>kadel</b> 21:17 22:1	208:7 211:7,21	118:11,13,18	216:14,17,21,22
31:1,22	212:14,15 215:25	119:15,17 122:25	216:22,23,24
	216:10 218:11	123:17 124:13	217:24 220:5



**[know - levine]**

223:3,9,20 224:3 224:21,23 228:23 229:3 230:5,6,21 232:7 233:16,16 233:22 234:16 235:7 237:16,19 238:3 239:16 242:10,14 245:1 248:11,12,15,16 249:1,8,11,21 250:19 253:2 257:25 264:17 266:11,16,17,21 269:4,22,23,25 271:10,16,22 272:10,11,13 273:4,21 274:18 277:14 278:10 279:24 280:19 281:5,16,21 284:13 285:8,15 <b>knowing</b> 117:9 118:5 <b>knowledge</b> 17:9 22:18 31:10 32:4 32:17,18 33:11,23 34:2,20,24,25 42:11,16 45:18,19 46:19,21 56:20 58:5 72:8 130:11 132:5,23,24 143:9 143:10 147:10,10 155:16 161:25 193:19 204:14 228:23 240:14 243:5 252:18,22 <b>knowledgeable</b> 32:13 66:22 80:1 <b>known</b> 35:4,5 42:22 43:25,25 47:6,6 48:3,3,4,5	56:20,20 71:15,16 130:9,15 131:23 131:24 133:23,24 245:13 279:5,5 280:4,15,15,20 281:14 <b>knows</b> 117:21 154:11 173:17 175:9 176:14 189:11,22 263:5 280:14 281:13 <b>I</b> <b>I</b> 6:6 15:2 135:20 212:21 <b>labeled</b> 242:8 <b>labels</b> 199:18 <b>lack</b> 42:16 133:3 143:9 212:14 247:10 <b>lacking</b> 189:24 190:6 <b>lacks</b> 173:24 <b>ladies</b> 74:20 <b>lainey</b> 1:16 2:17 13:15 <b>lambda</b> 4:4 12:20 12:21 <b>lambdalegal.org</b> 4:11,12 <b>landing</b> 29:1 <b>landmark</b> 168:19 <b>landscape</b> 233:15 <b>language</b> 163:4 164:22 165:12,16 165:18,20 194:10 195:8 198:18,21 199:7 221:23 223:7 266:19 <b>large</b> 106:7 126:10 144:3 275:23	<b>largely</b> 127:22 <b>larger</b> 148:7,17 154:24 165:4 166:2,5 235:19 <b>late</b> 87:18 195:15 <b>latest</b> 103:16 <b>law</b> 3:12 4:7,19 5:7,19 6:7,18 7:7 13:16 14:19 32:14 66:22 143:11 145:21,23,25 146:6 158:17 <b>lawrence</b> 4:18 13:17 225:15 <b>lawsuit</b> 142:24 <b>lawyer</b> 33:3 34:16 52:25 53:19 <b>lawyers</b> 45:3,21 58:2 69:8 253:2 <b>layperson</b> 89:6 <b>lead</b> 47:13 160:9 162:1 255:16,18 255:21 <b>leaders</b> 115:12 <b>leads</b> 162:3 242:18 <b>learn</b> 74:18 96:24 125:21 <b>learned</b> 69:6 99:3 137:11 <b>leave</b> 220:24 <b>leaves</b> 183:12 <b>lectures</b> 89:20 <b>lectureship</b> 88:21 <b>led</b> 89:10 96:2 101:15 239:13 <b>left</b> 83:1 110:20 111:16,18 112:7 258:15,16 <b>legacy</b> 261:4,10 <b>legal</b> 4:4 11:18 12:20 48:1 66:23	68:23 69:5,14 73:15,18 125:13 125:14 126:20 168:15,20 196:5 287:15 <b>legally</b> 38:14 132:13 <b>legislators</b> 218:12 <b>legislature</b> 134:25 218:5 <b>legitimacy</b> 81:12 83:12 147:6 <b>legitimate</b> 152:11 <b>length</b> 182:3 209:13 220:21 <b>lens.captivate.fm</b> 256:10 <b>lesbi</b> 232:4 <b>lesbian</b> 232:4,11 <b>lesbians</b> 223:24 <b>letter</b> 138:21 139:6,7 140:20,23 179:3 182:20 183:8 208:21 210:23 211:9 260:23 261:2,3 265:16 <b>level</b> 36:13 98:12 <b>levine</b> 1:19 2:21 8:3,12,16 11:10 13:15,22 14:3 15:1,5 16:11 36:11 47:16 51:19 57:10 63:11,13 64:6,7,8 69:2 70:2 70:19 75:23 92:4 95:1,5 108:10 111:3,3,5 156:2 180:12 184:22 203:19 218:4 219:9 222:8
---	---	--	---

**[levine - lower]**

223:12 229:8 252:6,11 255:2 256:12,13 258:3 259:5 260:24 262:15 264:20 265:20 267:9 268:3,11 269:8 270:3,23 272:2 273:10 275:13 278:14 279:10 280:6 283:11,13 286:7,17,22 287:3 287:8,12,13 288:4 288:15 <b>levine's</b> 183:23 184:1 186:24 251:16 <b>lgbtq</b> 113:20 118:1 118:25 <b>liaison</b> 52:2 <b>library</b> 92:12 258:21 <b>lichenstein</b> 283:11 <b>lichtenstein</b> 285:17 <b>life</b> 46:20 79:19 84:7,10,11 128:25 129:18 131:19 138:24 149:22 158:1,2 171:10,17 171:19,20,22 172:2,8,9,19,24 173:6,9 174:1,15 174:16 179:13,17 189:4,4,5,16 191:3 191:19 195:4,11 199:1 200:10 203:22 206:5 208:16 210:19 217:1,2,8,9 222:22 223:11 225:4	228:25 229:6,9 230:3 232:10,12 232:19 258:17 259:2 262:9 270:15 274:6 277:3,4,7,9 282:7 <b>lifelong</b> 190:17 <b>lifespan</b> 272:23 <b>lifestyle</b> 271:9 <b>lift</b> 74:16 <b>light</b> 251:21 268:21 <b>likelihood</b> 117:5 <b>limit</b> 96:12 <b>limitations</b> 38:15 132:24 133:9 136:18 212:2 277:13 <b>limited</b> 58:5 176:11 179:6 245:14 <b>lindsay</b> 251:4,19 <b>line</b> 78:12 82:24 105:17 144:25 <b>lisa</b> 90:10,22 232:2 242:12 <b>list</b> 87:20 92:4 168:7 195:5 237:20 <b>listed</b> 26:23 87:21 92:22 170:19 <b>listen</b> 140:4 147:8 <b>listening</b> 50:8 80:20 <b>litem</b> 45:21 <b>literal</b> 60:13 <b>literature</b> 31:11 32:5 101:12 156:20 158:12 171:14 172:3 175:9,10 202:3	225:4,24,24 <b>litigation</b> 168:3 170:1 <b>little</b> 34:18 51:7,9 53:2 75:9 78:24 122:9 127:17 135:23 179:4 212:21,22 223:21 223:24 231:14 <b>littman</b> 200:12 <b>live</b> 143:3 210:3 258:17 276:7 281:10 <b>lived</b> 234:20 245:21 <b>liver</b> 214:11 <b>lives</b> 83:16 160:7 189:6,7 193:2 244:17 264:6 281:10 <b>living</b> 25:13 128:23 129:11 140:5 190:9,10 222:17 <b>llp</b> 12:3,8,10,12,18 14:19 <b>located</b> 24:14 <b>london</b> 125:1 <b>long</b> 27:23 46:20 58:16,17,18 67:21 70:9 80:21 101:23 102:5 110:2 114:23 115:19 117:7 131:21 133:3,12,14 146:14 153:18 157:23 174:18 179:21 195:3,4 209:11,12 234:20 235:12,13 238:18 276:22	<b>longer</b> 97:4 101:2 101:3 154:9 164:22 196:4 209:15 222:13 <b>look</b> 35:3 70:5,11 92:25 122:25 135:10 144:14,16 149:19 151:21,24 151:24 152:2 161:2 163:12 170:18 172:3 181:17 217:23 219:2 222:6 242:23 243:23,23 244:3 263:6 283:14 <b>looked</b> 72:20 97:14 102:14,14 193:11 215:7 <b>looking</b> 69:8 91:25 144:11,14 214:21 <b>loop</b> 186:21 <b>loose</b> 283:21 285:10 <b>lose</b> 145:14 <b>losing</b> 36:4 <b>loss</b> 38:11 55:5 <b>lot</b> 54:15 76:7 85:2 86:3 172:25 200:20 232:4 233:22 <b>lots</b> 17:6 56:5 69:7 230:7 275:7 <b>love</b> 89:23,23 225:3 234:11 238:4 <b>loving</b> 89:25 <b>lower</b> 183:22 184:7,24,25 186:25 187:8,15
---	---	--	--



**[lunch - medical]**

<b>lunch</b> 105:17 148:21,24 152:21 155:18,19,22 <b>lung</b> 57:1 <b>lungs</b> 214:11 <b>l Wilkinson</b> 4:22 <b>lying</b> 39:21 40:1 <b>m</b> <b>m</b> 3:6 106:19 135:20 <b>m.d.</b> 8:17 <b>machine</b> 289:7 <b>maia</b> 4:6 12:21 <b>maintain</b> 239:14 <b>major</b> 162:1,3 180:14 213:2 215:9 220:2 <b>majority</b> 24:7 75:7 97:19 190:10 223:18 <b>making</b> 70:13 107:15 132:19 134:8,12,19,23 135:1,7 169:14 173:10,14 189:3 195:18 212:14 243:21 252:22 275:22 276:9 <b>malady</b> 226:18 227:19 <b>male</b> 16:5 25:9,12 38:6 129:10 139:16 142:20 143:5 145:6 147:15 149:16 174:10 193:6,12 193:22 194:5 204:17,18 <b>maleness</b> 223:2 <b>males</b> 25:13 223:20 232:14	<b>man</b> 109:24 257:14 258:20 <b>manifestation</b> 162:15 <b>manifestations</b> 181:20 271:24,25 <b>manner</b> 251:24 253:25 <b>mansion</b> 83:19 <b>mantle</b> 98:15 <b>march</b> 1:20 2:24 11:1,4 24:13 140:18 218:6 <b>marciano</b> 90:10 90:22 <b>marked</b> 51:2 63:3 63:4 69:24 70:2 217:21,25 256:21 258:11 260:14 261:21 263:11 265:11 267:1,22 268:25 269:13 270:8 271:2 272:18 275:4 278:4,23 279:18 <b>market</b> 137:8 <b>marriages</b> 244:1 <b>married</b> 221:25 243:25 <b>mas</b> 262:25 <b>masculine</b> 223:24 <b>massachusetts</b> 3:15 24:15 26:2 28:7 167:24 168:12,13 <b>mastectomies</b> 25:11 49:12 <b>mastectomy</b> 180:10 <b>master's</b> 97:21 263:14	<b>match</b> 19:17 150:19 189:8 <b>matches</b> 19:12 <b>mate</b> 234:11 <b>material</b> 126:21 199:19 203:11 <b>materials</b> 59:23 61:1,9 126:24 <b>mathematical</b> 185:23 <b>matter</b> 11:11 14:6 16:10,14,22 21:16 22:1 23:25 26:11 28:13,24 32:16 33:14,17,23 34:8 34:15 35:7,13,25 36:3 38:3,4,19 39:9,10 43:4 47:17 48:18 52:1 52:12,21,24 53:8 53:21,23 54:19,20 56:13 57:10 59:24 61:15 62:19 64:19 65:6,25 67:6 69:8 69:14 70:3,22 71:17 72:17,21 95:12 107:8 114:25 139:15 146:18 209:15 246:19 280:24 <b>matters</b> 26:1 31:2 31:3,13 32:24 35:12 41:10 42:14 45:20 69:15 126:20 168:20 171:22 <b>mccuskey</b> 6:16 7:5 <b>mean</b> 19:9,11,17 43:24 45:21 46:8 46:25 53:12 55:20 61:20 70:10 78:4	81:14 85:5 87:9 91:4 101:17 105:17 114:12 118:23 123:24 129:2 134:21 142:16 143:17 150:14 152:10 162:12,13,14 169:5 179:5,21 209:24 224:18 228:25 230:17 238:9 240:12 265:25 278:9 <b>meaning</b> 37:14 45:25 46:7 91:6 95:24 277:23 <b>means</b> 52:2 64:13 67:20 73:13 118:5 177:1 212:5 225:2 271:8 <b>meant</b> 73:9 103:11 <b>measure</b> 267:17 267:18 <b>measured</b> 96:12 <b>measurement</b> 212:6 <b>measurements</b> 96:8 136:16 <b>mecha</b> 136:16 <b>medal</b> 25:22 <b>media</b> 11:9 287:14 <b>medical</b> 22:24 23:2,16,17 25:17 27:21 30:24 47:13 73:6,8,12,15,18 74:18,19,25 75:6 75:11 82:9 83:2,2 83:6 89:11,12 117:6 134:13,15 134:15 135:3,7 142:9 189:19
---	---	--	--

**[medical - morning]**

191:25 196:25 208:9,9 210:9 211:10 228:22 234:7 246:23 <b>medically</b> 27:9,11 27:14,17 28:3 131:19 <b>medication</b> 20:7 20:12 186:17 <b>medicine</b> 74:9,15 74:23 81:24,25 83:19 87:22,25 93:8,9,9,10 98:21 <b>meet</b> 38:9 58:16 58:18 116:17 118:14,17 <b>meeting</b> 90:1 101:2,4 115:24 182:17 284:8 <b>meetings</b> 202:6 <b>member</b> 93:2,24 94:1 97:2,18 99:2 99:10,14,16 107:1 107:17 149:12 <b>members</b> 89:13 106:5 246:22 255:19,24 <b>membership</b> 97:11,20 <b>memory</b> 195:17 <b>men</b> 204:18 225:16,18 227:10 233:6 <b>men's</b> 225:17 <b>mental</b> 79:23 84:10 88:16 100:2 100:21 158:23 160:4 238:5 <b>mentally</b> 82:15 173:5,25 188:18	<b>mention</b> 113:8,18 156:9,9 163:16 <b>mentioned</b> 44:18 56:10 106:25 107:1 125:10 127:3,3 140:12 163:11,14 176:19 203:14 211:17 227:17 246:3 255:14 261:2 <b>merely</b> 161:8 199:1 206:7 214:3 <b>met</b> 58:14 99:20 99:20 141:7 188:5 272:14,15 284:24 285:14 <b>method</b> 172:2,3 179:7,8,18 184:23 201:5 248:1,2 <b>methodologic</b> 130:6 <b>methodology</b> 130:15 <b>methods</b> 136:19 137:15 179:20 186:25 201:1 247:6,17,20 <b>middle</b> 80:24 145:1 205:8 238:16 245:8 249:3 250:4 <b>mind</b> 31:18 32:9 55:23 84:13 92:16 157:25 216:12 <b>mindful</b> 199:10 <b>minor</b> 87:10 91:7 138:9,12 141:3,4 141:23 142:3 192:21 <b>minority</b> 224:19 244:23 246:11	272:23,25 273:3,8 <b>minors</b> 87:9 116:14 130:23 165:5,9 166:2,6,10 167:13 208:25 209:1 <b>minuses</b> 222:5 <b>minute</b> 83:9 212:19 <b>mischaracterizes</b> 169:15 250:7 251:11 254:12 <b>mischaracterizing</b> 250:10 <b>misconstrue</b> 208:6 <b>miserably</b> 139:9 <b>misleading</b> 230:2 <b>misread</b> 137:22 <b>missed</b> 187:13 <b>missing</b> 34:25 187:8 191:16 283:3 <b>misstated</b> 92:23 <b>mistake</b> 227:21 228:1,3 <b>mistaken</b> 226:10 226:17 227:1,19 <b>mistakes</b> 40:4 <b>misunderstand</b> 248:12 <b>misunderstands</b> 248:6 <b>misunderstood</b> 276:17 <b>mitch</b> 7:16 <b>mixing</b> 135:6 <b>model</b> 121:6 143:24,24 144:18 181:4,8,9 182:2,5 182:6,8,8,11,12 183:3,18 186:5,5,8	186:11,12 202:15 202:15,16,20 203:4,8,12,18,18 203:20 204:6,10 205:2,5,17 206:2 208:4,8,12 <b>models</b> 8:19 180:19 181:2 198:7,11 201:10 202:1 203:3 208:3 <b>modern</b> 71:18 225:24 <b>modest</b> 106:6 229:4 <b>modesty</b> 229:2 <b>modify</b> 96:3 <b>mom</b> 273:6,13 274:20 <b>moment</b> 26:23 46:5 50:21 51:1 55:15 56:1 70:5 201:8 256:24 274:8 <b>month</b> 15:13 24:21 166:13 180:8 257:20 <b>monthly</b> 167:1,4 <b>months</b> 30:2 38:18 77:25 89:3 110:7 113:1 136:13,14 179:22 180:7,8 210:4 242:25 275:20,21 <b>morally</b> 132:14 <b>morass</b> 135:8 <b>morgan</b> 5:18 13:4 13:4 286:19,19 <b>morning</b> 12:2,7,9 12:11,13,15,19,23 12:25 14:3,4 128:21 129:3
--	---	--	--

**[morning - noteworthy]**

235:5 246:3 <b>mother</b> 1:6 2:6 11:12 21:6 85:16 169:14 197:3,4 <b>mothers</b> 239:16 <b>motion</b> 8:13 64:9 65:20 66:7 67:7 164:17 251:17 <b>motivation</b> 276:20 <b>motivations</b> 171:1 <b>mount</b> 283:22 284:21 <b>mourning</b> 140:2 <b>mouth</b> 139:21 163:1 230:15 257:15 266:17 <b>move</b> 194:20 196:13 198:2 <b>moves</b> 75:1 <b>moving</b> 167:18 <b>multicultural</b> 130:18 <b>multiple</b> 89:15,15 124:23 125:11 127:3 130:18 200:9 234:21 <b>multisite</b> 130:17 <b>multitudes</b> 256:11 <b>murder</b> 82:17 <b>music</b> 148:13 <b>mzelkind</b> 4:12	40:19 41:6 78:23 92:24 109:10,10 109:13,15,16,16 110:22,25 111:4 122:23 197:22 214:12 237:6 271:16 289:15 <b>named</b> 39:10 88:20 103:3 <b>names</b> 147:24 <b>narrative</b> 50:2 <b>narrow</b> 279:22 280:13 <b>narrowly</b> 151:21 <b>natal</b> 142:20,20,21 142:22 143:2,5 149:16 151:25 152:3 232:8,13,14 <b>nation</b> 168:19 <b>national</b> 120:23 <b>natural</b> 171:22 <b>naturally</b> 177:6 215:5 <b>nature</b> 15:20 16:21 34:2 38:3 71:15 74:25 94:18 95:3 96:5 128:13 176:6 182:13 195:1 <b>navigating</b> 232:19 <b>ncaa</b> 147:23 <b>ne</b> 4:20 <b>near</b> 140:23 <b>nearly</b> 191:19 <b>necessarily</b> 43:11 190:24 <b>necessary</b> 27:9,9 27:11,14,17 28:3 146:20 265:16 <b>necessity</b> 27:22	<b>neck</b> 258:24 <b>need</b> 16:15 18:1,16 18:20 47:7 60:22 75:10 77:13 79:4 80:22 91:17 95:21 96:9,12 104:4 114:24 130:16 132:16 136:9 144:15 164:18 182:18,19 205:3 229:2 254:4 283:16,17 <b>needed</b> 57:16 96:9 112:5 <b>needs</b> 76:1 144:2 172:7 174:18 221:10 284:12 <b>negative</b> 39:20 74:4 84:10 117:19 130:2 139:21 158:13 163:3 <b>neither</b> 185:9 289:11 <b>nets</b> 286:1 <b>neurologist</b> 79:1 <b>neurology</b> 78:22 <b>neutral</b> 253:25 <b>never</b> 24:8 26:18 30:7 34:21 39:16 40:9,20 42:18 45:3 77:17,17 78:5,7 88:6,8 92:21 114:2,13 115:14 126:14,15 141:7 170:13 209:2,4 228:11 241:16 242:17 271:23 272:13,14 272:15 <b>new</b> 4:10,10 16:3,4 16:5,6 60:6 75:5	112:1 180:9 182:7 188:3 203:20 209:3 242:17 243:4 250:22 263:23 266:11 <b>newborn</b> 196:18 197:1,2 <b>newborns</b> 196:22 <b>newly</b> 213:13 <b>newspaper</b> 143:1 <b>nice</b> 192:5 <b>night</b> 20:9,12 <b>nih</b> 79:21 197:17 197:21 <b>nimh</b> 79:21 <b>nine</b> 220:7,16 258:14,18 <b>ninth</b> 41:4,5 <b>nodding</b> 19:1 <b>non</b> 38:7 191:18 223:15,17 <b>nonjudicial</b> 44:21 <b>nope</b> 145:17 <b>normal</b> 217:16 264:4 <b>norsworthy</b> 40:15 41:21 170:15 <b>north</b> 21:16 22:1 31:2 32:24 72:21 <b>nosewor</b> 170:15 <b>noseworthy</b> 39:11 40:15 41:17,25 170:17 <b>note</b> 110:14,18 211:21,25 <b>noted</b> 287:17 288:7 <b>notes</b> 78:19 179:3 <b>noteworthy</b> 168:17,17
<b>n</b>			
<b>n</b> 15:1,2 23:5 106:19 190:14 256:12 <b>naive</b> 68:23 217:17 <b>naivety</b> 69:13,14 <b>name</b> 11:17 14:18 14:24 15:16 23:5 28:5,10 35:18,19			

**[notice - okay]**

<b>notice</b> 70:25 <b>noticed</b> 198:18 213:13 214:18 <b>noticing</b> 12:1 <b>notion</b> 48:13,13,16 83:8,13 161:11 173:23 227:20 237:24 244:15 <b>notions</b> 31:20 84:15 <b>notwithstanding</b> 60:24 284:23 <b>novel</b> 54:24 <b>novels</b> 56:7 <b>november</b> 60:5 77:9 88:3 <b>nowadays</b> 134:23 215:13 <b>number</b> 8:10 11:16 25:1 56:4 88:12 96:12,20 100:6,8 111:14 126:9,10 160:6 161:20 202:21 206:2 268:19 287:14 <b>numbers</b> 77:6 128:8,9 136:1 165:4 166:2,6 <b>numerator</b> 185:9 185:9,19,21 187:9 187:17 <b>numerical</b> 86:8 <b>numerous</b> 194:14 235:3 <b>nursery</b> 197:1	<b>o'malley</b> 256:1,14 <b>oak</b> 257:16 <b>oaks</b> 6:8 <b>oath</b> 13:23 20:1 289:6 <b>obese</b> 271:20,21 272:5,7 <b>object</b> 54:10 61:16 81:9 109:3 152:22 186:15 193:14 213:19 226:25 236:8,12 250:2 262:23 263:1 <b>objected</b> 36:4 185:3 225:12,13 <b>objecting</b> 38:11 120:2,15 132:25 201:1,2 205:22 <b>objection</b> 14:8,11 14:12 27:15 37:12 40:13 41:15 48:10 48:22 49:3,19 50:1,12 55:13 57:21 59:25 60:24 66:1,17 67:9,17 68:6,14,17,19 69:12 83:21,25 85:12 86:15 103:9 106:14 111:13 119:3,22 128:3 134:10 141:9,25 146:3 150:12 151:20 153:2 154:20 158:19 159:12 161:19 162:24 163:9 169:15 170:6 171:4 180:24 183:4,5,20 184:3,4 184:11 187:1 192:3 195:15	196:23 200:19 205:20 206:19 213:22 221:22 222:15 224:8 226:11,19 227:7 228:17 229:20 230:24 231:9,13 231:25 232:21 234:4 240:23 241:6,24 242:9 243:11 246:20 247:8,19,23 249:5 249:6,17,23 250:7 250:9 251:11,25 253:15 254:12,13 259:9 263:8 264:24 267:12 268:5,22 269:18 285:1 <b>objections</b> 11:24 14:8,11 41:20 <b>objective</b> 31:9 92:19 93:7,11 104:11 <b>objectively</b> 132:10 <b>objectivity</b> 104:2 <b>objects</b> 18:1 199:1 237:9 <b>obligations</b> 36:12 36:19 82:22,23 95:3 <b>obnoxious</b> 226:4 227:3 <b>observing</b> 193:21 <b>obstetrics</b> 197:2 <b>obvious</b> 259:25 <b>obviously</b> 16:9 159:15 194:9 205:7 <b>occasionally</b> 273:22	<b>occasions</b> 25:12 <b>occur</b> 160:20 214:13 <b>occurrence</b> 85:9 <b>occurrences</b> 137:10 <b>occurring</b> 214:13 246:7,9,10 <b>occurs</b> 75:3 233:6 233:7 <b>offending</b> 223:5 <b>offensive</b> 223:4 <b>offer</b> 30:22 73:7 94:25 202:9 <b>offered</b> 25:24 26:19 45:2 107:11 115:6 <b>offering</b> 31:9 63:21 <b>office</b> 13:11 <b>officer</b> 25:9 <b>official</b> 1:11,13 2:12,13 <b>officials</b> 170:3 <b>oftentimes</b> 126:21 <b>oh</b> 27:4 29:20 35:11 37:15 73:25 76:9,19 97:4,19 106:22 110:6 127:16 138:20 141:18 153:12 157:22 162:4 166:23 168:25 169:8 201:14 203:7 217:11 218:23 219:9,19 258:10 <b>ohio</b> 139:12 <b>okay</b> 14:20,22 15:20 20:11 21:11 23:14 35:11 50:19
<b>o</b>			
<b>o</b> 23:5 37:24 135:20 <b>o'clock</b> 148:20			

[okay - overdose]

50:25 54:6 62:16 63:1,14 64:18 65:5,9 67:13 70:23 73:11 75:21 77:8 78:17 91:11 91:18,25 92:23 97:2,17 100:25 107:25 110:10 111:6 119:9 123:9 140:5 142:5 143:11 144:10 151:17 156:7 158:15 163:6 166:22 170:10 178:12 182:22 194:19 198:2 201:18 202:11,23 203:1,7 207:24 211:6 212:18 218:7,10,19 219:23 237:10 253:21 255:22 256:6,17 257:10 259:23 260:5 265:9 266:18 275:10 283:8,18 <b>old</b> 84:22,22 93:21 132:1,2,3 134:2,3 134:3,4 140:3,12 147:3,3,4,4 149:11 150:7 151:17 186:14 220:6,7,7 220:11,12,13,16 220:16 221:7 234:22,22 235:7 249:2,13 250:3,14 250:24,24,24 264:2 <b>older</b> 80:24 85:7 89:8 93:10 209:9 234:21 250:19	<b>once</b> 47:4 87:15 88:22 140:21 143:23 166:23 167:5 195:25 <b>one's</b> 84:17,17 116:8 215:9 281:22 <b>ones</b> 130:2 241:12 <b>ongoing</b> 114:3 <b>online</b> 60:7 245:13 263:7 <b>onset</b> 215:2 <b>open</b> 69:22 148:11 <b>openly</b> 284:1 <b>operated</b> 136:1,2 <b>operationalize</b> 215:22 <b>opine</b> 41:11 <b>opinion</b> 42:10,19 42:24 43:1 49:17 49:24 55:4 56:7 56:18 59:24 61:2 61:15 63:21 68:25 79:20 107:11 150:17 151:3,9,12 151:13 155:16 157:12 163:17,22 164:1 170:12 186:4,7,10 224:6 230:4 248:10 249:1,12,21 250:2 250:10,12 251:3 <b>opinions</b> 45:3,20 95:12 96:17 152:10 250:8 252:1 254:15 283:7 <b>opportunity</b> 23:7 208:13 214:15 217:6	<b>oppose</b> 251:22 252:13 <b>opposed</b> 132:8 160:15 161:18 173:4 193:12 236:20 247:5,16 248:18,24 <b>opposing</b> 36:1 <b>opposite</b> 117:12 156:24 193:1 <b>opposition</b> 33:21 34:13 65:19 66:6 67:7 <b>option</b> 133:5 202:12 <b>options</b> 133:4 202:9 226:21 <b>oral</b> 37:14 42:7 43:8,16 45:9 46:1 46:8 48:7 <b>oranges</b> 180:17 <b>order</b> 47:7 96:9,13 112:5 185:7,7 253:12 <b>ordinary</b> 282:10 <b>organ</b> 214:9,12 <b>organization</b> 39:1 92:19 93:6,7 94:19 98:11,12 103:1 107:4 122:3 122:4,6 149:14 255:3,7,9 266:6 284:14,18,19 <b>organizations</b> 120:14 147:25 <b>organized</b> 151:5 285:15 <b>organizers</b> 115:12 <b>organizes</b> 149:14 <b>orgasm</b> 234:16	<b>orient</b> 53:6 <b>orientation</b> 215:22 223:19 224:5 231:24 232:6,8,9 233:11,16,18 <b>orientations</b> 233:23 <b>origin</b> 199:3 <b>original</b> 167:16 193:10,10,15 223:3 230:20 264:14 277:22 <b>origins</b> 79:23 <b>ostrich</b> 134:6 <b>ought</b> 115:24 117:2,15,16 168:21 189:7 262:12 263:20 270:14 <b>outcome</b> 11:21 38:13 39:20 96:13 149:7 155:2 169:19 174:18 188:22 190:12 222:14 224:3 239:19 <b>outcomes</b> 101:23 102:5 133:12 157:2 238:1,9 271:25 <b>outlier</b> 120:2 264:1 <b>outside</b> 59:15,18 231:25 254:14 <b>overall</b> 176:22 <b>overcome</b> 86:6 275:9 <b>overcoming</b> 275:8 <b>overdose</b> 139:11 139:18,18
---	---	---	---

**[oversimplify - partner]**

<b>oversimplify</b> 264:16	<b>paradigm</b> 198:14 198:23 199:10	<b>parent</b> 85:20,21 86:1 120:11	144:17 151:1,2 168:24 171:8
<b>p</b>	<b>paragraph</b> 55:23 92:24 108:15,17 108:21 110:15,18 137:17,19 140:7 143:16,20,25 144:7,15,19 145:1 145:14,20 148:23 148:25 156:5,11 156:17 164:8,10 164:21 165:18,19 167:19,19,25 168:4 170:16 171:7,8,10 187:21 187:22 192:18,20 193:23 194:21,22 196:6 197:8,15,16 197:16 198:13,22 200:12,15 201:21 202:13,17,25 203:13,14 204:13 205:1 207:6 212:21,24 213:8 219:14 229:15 235:10,21 243:14 245:7,8 282:20,23 283:9,10,20	122:19,20 127:9 127:15 128:17 197:5 240:11 271:10 <b>parent's</b> 122:23 240:12,13,13,14 <b>parental</b> 38:11 128:14 199:11 <b>parents</b> 35:13 36:3 36:7,8 37:20 38:6 38:10,17,24 85:5,7 85:15 116:15,20 117:1,1,9,17 118:7 120:11,12,22,22 120:23,24,24 121:4,5,7,10,16,21 122:2,6 123:4,11 123:22 124:21 125:5,8 127:2,22 127:23,24 128:2,4 129:22 130:1,24 130:25 132:5,11 133:23 139:13,25 141:9,18 147:1 152:2 165:10 167:7 169:3 201:5 201:6 203:24 204:3,4 206:25 209:21,22 210:16 210:21 221:14 238:3 239:13 240:3,4,6 249:16 259:3 279:4,6 <b>part</b> 36:10 55:24 61:9,14 71:17 81:5,5 82:5 98:18 98:18,19 103:7,12 104:18,18 112:14 113:1,15 114:20	197:1,4 200:7 205:14 219:4,5 233:14 238:6 247:12 252:17 275:25 <b>partially</b> 170:24 260:7 <b>participant</b> 99:22 <b>participants</b> 2:22 11:5 <b>participate</b> 96:15 149:4 151:4 153:14 154:24 233:10 <b>participated</b> 49:11 77:16 <b>participating</b> 152:1 154:25 <b>participation</b> 31:11 32:6 42:8 43:3 146:11 156:23 169:18 252:13 253:13 <b>particular</b> 27:24 32:3 33:25 36:3 38:23 41:8 52:6 54:19 56:21 60:12 60:14 72:4,10 79:17 80:3 101:3 117:13 131:4,21 138:3 165:23 199:21 242:17 249:9 <b>particularly</b> 120:25 <b>parties</b> 11:7 14:9 94:22 289:13 <b>partner</b> 234:11
<b>p</b> 15:1 256:12 <b>p.m.</b> 2:23 108:7 155:21,24 207:14 207:17 254:21,24 286:3,6 287:11,17 <b>page</b> 8:10 17:17,20 63:8,25 64:1,4,4,5 64:5,7,23 65:10,10 65:11 70:16 71:1 75:17,18,18 78:14 78:19 91:11,22,23 92:4 108:16 137:16,18 143:15 143:19 156:4 164:8 167:19 194:22 197:19 198:3 201:10,22 201:23 203:12 205:2 212:25 213:8 218:13,15 218:22 235:11,14 282:23 283:2 <b>pages</b> 1:25 55:21 70:8 74:17 <b>paid</b> 32:23 33:1 253:10 <b>pain</b> 26:6 <b>panels</b> 90:14 <b>paper</b> 99:13 101:8 101:9 107:5 109:9 109:20,21 174:8,9 197:24,25 228:20 229:10,15 230:6,7 239:23 260:19 266:20 <b>papers</b> 56:14 60:2 60:11 107:6 133:11 170:8	<b>paralegal</b> 12:21 <b>paraphilia</b> 225:8 227:6,9 <b>paraphrasing</b> 229:17 <b>pardon</b> 29:20 76:7 95:20 153:7 274:12		



**[parts - percent]**

<b>parts</b> 125:2	<b>patients</b> 63:24	<b>peers</b> 215:9,18,19	182:14,14 189:11
<b>party</b> 11:20 36:1	82:22 84:15 85:1	220:11,13	190:24 191:6,8,13
46:10,12,13 47:24	85:3,7,10 86:10,11	<b>pejorative</b> 226:22	191:15,18,19,25
47:25 48:8 49:2	86:13 87:2,11,18	<b>pelet</b> 3:6 12:13,14	192:13 202:9
49:18,25	89:2,4 90:16,25	<b>penalty</b> 288:5	206:1 208:14
<b>pass</b> 193:1 238:5	100:16 127:16,21	<b>pending</b> 76:20,21	209:9,17,25 210:2
281:15,20	136:1 138:3	178:10 249:18	211:15 214:23
<b>passage</b> 219:3,12	141:23 167:3,6	<b>pennsylvania</b>	215:13 216:3,4
<b>passion</b> 263:22	173:11 174:4,6,12	218:5	221:24,25 222:1,7
269:25	174:24 175:5,7,24	<b>people</b> 24:24 25:4	222:8 223:13
<b>passionate</b> 235:7	176:2,21 177:16	26:6,7 30:18	225:7 226:8,10,17
277:15	177:24 178:17	32:10,14 33:7	227:15,18 228:25
<b>passionately</b> 282:5	179:7,19 183:16	36:6 45:18 46:23	229:1,5 230:2
<b>paste</b> 72:16,17	183:18,22 184:22	68:19,25 69:7	231:23 232:9,17
<b>pathway</b> 16:23	184:23 186:24	74:23 75:3 78:4	232:18 233:11,15
195:11 223:11,14	187:12 188:9,14	80:4,5 83:15,17,21	233:22,25 234:25
223:17 227:12	198:25 203:20,23	96:16 97:21,22,23	236:11,19 238:8
<b>pathways</b> 226:1	206:25 221:3	98:5,6,15 100:8,10	241:4 242:21
<b>patient</b> 15:24 16:2	222:12 230:23	100:13 101:25	243:9,24,25 244:1
17:7,8,10 27:25	231:19 233:21	103:24 104:24,24	244:10,18,20,24
38:8,9 63:20	236:24 238:10	106:5,15 107:3,11	245:3,3 246:2,5,10
82:17,19,21,22	239:18 244:4	107:16 114:1,9,14	246:11,25 247:2,3
83:1 85:16 86:3,6	284:2,7 285:9	114:23 115:23	247:5,7,16,25
86:23,25 91:2,4,9	<b>patterns</b> 102:2	117:15 118:5,11	248:16,19,25
108:22 109:2,8,9	171:21 223:24	118:18 122:22	250:19 252:19,24
109:14 110:3,4,12	<b>pause</b> 178:3	123:8,14,16	254:10 257:24
114:24 116:15	213:10 214:1,3,7	124:25 125:1,1	262:5 263:16,20
124:23 127:1,4,9	214:19,24 215:25	126:1,16 128:5	267:6,7,16 268:1
127:15 138:9,12	216:11	129:13,16,25	268:12 269:3
138:21,24 139:4,8	<b>paused</b> 215:11	130:10 131:9	272:11,12 273:22
140:11 142:3	217:12	133:15 135:21,23	274:2 280:20
176:19 182:17	<b>pdf</b> 64:2	135:24 136:2,4	281:2,3,10 282:4
183:6 203:21	<b>pediatric</b> 174:2	140:7 141:7	284:22 285:13
208:12,16 209:20	176:7	148:12 152:15	<b>people's</b> 80:21
210:15,17 225:20	<b>pediatrician</b> 86:2	154:3 155:5	97:9
228:1,20 231:6	176:2	159:21,25 160:12	<b>perceived</b> 182:18
239:13 241:7	<b>pediatrics</b> 146:7	160:15 161:4	237:20
258:3	147:18 148:6,7	163:13 171:18	<b>percent</b> 73:10,13
<b>patient's</b> 138:22	172:22 176:4,9	172:18 174:3	73:19 74:20,24
141:12 210:20,22	196:25	176:4 177:4,9,12	75:11 79:22
230:15		179:8,9,15 181:9	123:14 175:7

**[percent - plead]**

177:12,15 247:5 247:16 248:16 <b>percentage</b> 243:24 267:16 275:24 <b>perception</b> 137:2 137:5 <b>perfectly</b> 83:4 <b>performances</b> 82:1 <b>performed</b> 211:8 <b>performing</b> 120:7 <b>period</b> 44:6 112:9 140:15 155:17 176:23 190:13 197:6 209:8 210:8 210:10 211:7 <b>periodically</b> 167:7 <b>periods</b> 175:5 <b>perjury</b> 288:5 <b>permissible</b> 239:3 <b>permission</b> 66:4 285:13 <b>permit</b> 251:18 <b>permitted</b> 27:3 42:25 145:8 147:16 <b>permitting</b> 150:6 <b>perpetual</b> 140:2 <b>perplexed</b> 253:22 <b>person</b> 19:12 21:7 25:24 26:14,16,17 27:19 29:2,6 37:15,15 50:11 54:12,15 66:20 74:11 82:15 90:21 124:2 130:8 138:25 139:1,2,11 139:23 140:11,20 140:22 141:10 149:18 150:8 161:25 162:2,4	172:24 173:4,5,25 174:3,8 178:20 180:7 182:23 183:9,9 188:19 195:12 206:5 210:16 211:1 215:10 221:6,12 221:25 222:18,23 222:25 223:11 224:17,18 228:23 229:21,25 230:11 230:21 233:7 234:21 240:17 246:23 248:5 262:6 263:4,14 270:13 271:19 274:6,18 276:14 276:19 281:13 <b>person's</b> 140:24 149:20 189:1 230:4 232:7 235:21 <b>persona</b> 38:7 <b>personal</b> 16:19 69:11 233:18 <b>personality</b> 126:3 <b>personally</b> 68:18 111:17 123:5 126:15 <b>persons</b> 45:21 <b>perspective</b> 46:20 46:21 151:25 152:1,2,5 153:13 171:11,17,22 172:2,5,13,24 174:16,16 179:14 191:3 212:15 213:17 229:6 281:1,2 <b>perspectives</b> 152:12,14	<b>perturbed</b> 120:25 <b>pervasive</b> 160:8 <b>perverse</b> 236:19 <b>phase</b> 66:11,19 67:16,19 <b>phases</b> 67:18 <b>phenomenon</b> 72:16 124:15 166:7 197:2 220:8 220:9,10 240:8 241:16 <b>phrase</b> 21:21 194:1,3,4,5,8 195:20 266:16 <b>phrases</b> 175:19 195:22,23 <b>physical</b> 199:12 271:9,24 <b>physically</b> 91:3 <b>physician</b> 62:23 74:12 174:17 282:10 <b>physicians</b> 173:21 <b>physiology</b> 42:14 56:25 189:1 224:12 234:10,13 <b>pi</b> 165:19 193:5,19 <b>pick</b> 148:24 <b>picture</b> 271:21 <b>pictures</b> 272:12 <b>piece</b> 77:9 211:19 <b>pike</b> 172:16 <b>pill</b> 20:9 <b>pioneers</b> 256:11 <b>pittsburgh</b> 74:13 <b>place</b> 11:7 48:22 75:5 114:9 195:7 256:15 268:7 289:4 <b>placed</b> 50:22 289:6	<b>plaintiff</b> 1:7 2:7,21 3:3 4:3 11:11 12:4 12:8,10,12,14,16 12:18,20,24 19:22 21:6 64:15 142:6 144:13 <b>plaintiff's</b> 8:13 32:22 64:9 65:20 67:7 <b>plaintiffs</b> 54:3 171:1 <b>plan</b> 83:16 113:1 <b>play</b> 42:25 144:13 149:11 150:6,8,19 157:13 162:20 199:16 249:4,16 256:17,19 258:8 260:12 261:19 262:20 263:10 265:9 266:24 267:20 268:23 269:11,15 270:6 270:25 272:16 274:4 275:2,18 278:2,21 279:15 279:16 <b>played</b> 45:2 257:5 257:11,18 258:13 259:5,8 260:16 261:23 262:24 263:13 265:13 267:3,24 269:2,9 269:21 270:10 271:4 272:20 275:6 278:6,25 279:20 <b>playing</b> 151:17,18 158:8,16 249:14 263:1 <b>plead</b> 262:1,11
---	---	---	---



**[please - prejudicial]**

<b>please</b> 11:24 13:19 14:22,24 18:7,17 18:25 27:12 29:12 29:21 34:5 46:13 49:23 51:1 58:11 70:5 73:22 91:18 96:4 102:19 132:22,22,23 149:9 152:24 153:10 156:13 164:5 165:24 184:19 185:6 190:2 228:10,10 252:3,4 256:19 258:8 260:12 261:20 262:20 263:10 265:10 266:24 267:21 268:23 269:11 270:6,25 272:17 275:3 278:3,22 279:17 <b>pleasing</b> 54:17 <b>pleasure</b> 234:15 <b>pllc</b> 5:17 6:5 13:1 <b>plus</b> 70:9 <b>pluses</b> 222:5 <b>podcast</b> 77:16,20 78:10 255:14,16 256:4,13 259:14 259:16,19 260:11 260:25 262:16 263:5 264:21 265:5,21 267:10 <b>podcasts</b> 77:19 78:1 <b>point</b> 14:21 45:3 62:1 71:21 82:5 83:7 105:16,18 124:1 135:9 148:20 159:20,24	160:5 186:20,22 212:10,13 217:19 240:20 254:4 258:1 275:15 <b>pointing</b> 254:16 <b>points</b> 213:3 <b>policies</b> 147:25 <b>policy</b> 162:20 <b>political</b> 32:3 135:6 148:18 200:21 <b>politically</b> 226:3 <b>politicians</b> 134:8 134:14,20,21 135:11 <b>politics</b> 111:11,22 <b>pool</b> 243:16 <b>pop</b> 201:19 <b>popular</b> 225:4 <b>population</b> 30:25 160:23 190:19,22 191:6,11,12 234:16 <b>portion</b> 94:15,20 95:24 205:25 <b>portions</b> 91:24 <b>portray</b> 221:11 <b>pos</b> 95:4 <b>pose</b> 118:13 <b>poses</b> 160:12 <b>position</b> 30:21 32:10 33:24 40:16 47:18 82:16 130:12 175:3 248:6,7,8 270:18 <b>positive</b> 29:25 74:3 84:9 117:19 128:18,20 129:13 158:13 <b>possession</b> 40:5	<b>possibilities</b> 185:12,14 221:7 <b>possibility</b> 95:5 187:10 209:7 215:15 235:1 <b>possible</b> 183:16,21 183:25 184:7,9,17 184:21,24 185:1 186:24 221:20 227:17 242:16 <b>possibly</b> 183:13 194:15 214:20 244:11,15 <b>postcard</b> 179:4 <b>postmortem</b> 139:13 <b>postoperative</b> 271:20 <b>postpartum</b> 273:6 273:13 <b>potential</b> 37:20 163:12 165:6 166:3 <b>potpourri</b> 97:23 <b>pounds</b> 277:5 <b>power</b> 233:10 264:13 <b>powerful</b> 195:23 <b>practical</b> 96:13 <b>practice</b> 64:16 82:10 84:24 85:9 111:4 113:23,24 124:11 125:12,21 137:3 176:24 181:25 186:10 206:18,20,22 246:7 257:12,14 264:11,12 <b>practices</b> 90:3 126:19 188:2 283:7	<b>practicing</b> 84:7 175:2 280:22 281:25 <b>practitioner</b> 105:3 128:18 <b>practitioners</b> 129:23 135:15 144:24 176:10 203:4 205:5 206:17 <b>pre</b> 275:24 276:10 <b>preber</b> 44:4,15 <b>prebu</b> 43:21 <b>preceded</b> 101:21 275:19 <b>precedent</b> 101:14 101:17,21,24 102:2,6,10 103:7 <b>precedents</b> 69:9 <b>precedes</b> 276:4 <b>precipitate</b> 155:3 155:3 <b>preclude</b> 198:24 <b>precluded</b> 170:25 <b>predeclaration</b> 275:24 <b>predetermined</b> 212:5,5 <b>predict</b> 155:1 162:7 222:5 241:12 277:11 <b>predispose</b> 271:9 <b>preexisting</b> 161:13 <b>prefer</b> 27:17 135:3 135:4 148:24 159:17 196:3 <b>preferable</b> 35:8 <b>preference</b> 195:20 <b>preferred</b> 222:14 <b>prejudicial</b> 112:1
--	--	--	---

**[preliminary - process]**

<b>preliminary</b> 8:14 64:9 65:20,25 66:6,10,19 67:8,16 67:19,24,25 213:15 <b>prelude</b> 276:18 <b>premed</b> 74:13 <b>premised</b> 237:23 <b>premorbid</b> 161:2 <b>prenatally</b> 206:6 <b>preparation</b> 59:19 60:15 62:9 <b>prepare</b> 53:20 58:8,10,21 67:15 70:23 <b>prepared</b> 97:21 199:20 218:11 263:14 <b>preparing</b> 71:4 73:1 165:24 <b>prepubertal</b> 43:9 43:17,21 44:4,6,11 44:15,18,25 45:13 45:14 86:21,22,24 87:2 90:25 91:1 157:6,9 <b>prerog</b> 134:1 <b>prerogative</b> 134:1 <b>pres</b> 24:10 <b>prescribe</b> 140:19 <b>prescribed</b> 123:6 123:12,13 138:1 138:11,15,18 141:2,6,7,10 <b>prescription</b> 23:21 115:25 <b>presence</b> 59:15 <b>present</b> 7:15 11:22 24:23 33:11,22 56:19 114:1 118:22 122:3	149:5 160:13 208:18 <b>presentation</b> 8:19 90:8 229:22 262:7 <b>presentations</b> 90:15,19 <b>presented</b> 20:25 29:15 39:18 40:6 88:17 90:12 120:18 165:7 186:14 273:18,20 <b>presenting</b> 56:18 90:2 154:4,7,14 165:5 166:3 <b>preserve</b> 131:19 239:21 <b>preserves</b> 14:8 <b>pressure</b> 100:10 110:11 <b>presume</b> 35:18 68:8,11 115:11 142:11,14,19 143:4 153:23 188:22 <b>presuming</b> 248:17 <b>pretend</b> 131:5 147:6 <b>pretending</b> 147:2 <b>pretty</b> 124:22 225:9 <b>prevent</b> 20:4 94:23 158:9 276:23 <b>preventing</b> 36:7 158:8 <b>previous</b> 45:19 68:19 71:19 107:8 172:19 195:21 205:24,25 228:24 <b>previously</b> 21:13 26:23 34:1 48:7	48:25 52:11 167:20 221:4,13 <b>primarily</b> 83:17 173:10 221:9 <b>principle</b> 115:18 217:10 233:24 234:6,24 239:21 <b>principles</b> 47:12 75:3 281:21 <b>prior</b> 17:11 42:6 43:7,15 45:12 71:9,12 136:17 195:7 274:10,20 276:12 289:5 <b>prison</b> 16:2 23:7 24:24 27:3 32:7 49:5 <b>prisoner</b> 15:15 16:10 22:10,23 23:2,4,6,16,25 24:1,10,14 25:17 25:21 26:9,20 27:14 28:4,11,18 29:10,13 39:10,19 49:8 170:20 <b>prisoners</b> 22:20 23:23 24:16 30:1 49:12 <b>prisons</b> 26:2 <b>private</b> 233:18 257:14 <b>privilege</b> 14:9 <b>privileged</b> 82:6 <b>privileges</b> 25:6 <b>privy</b> 96:22 <b>probably</b> 15:17 25:1 42:13 55:21 72:21 74:16,21,21 76:2 88:25,25 90:17 99:4 100:5 103:17 110:6,6	112:24 121:7 128:6 137:17 166:16,18 172:23 176:11 185:13,14 194:13 196:24 197:24 217:9 223:21 224:15,17 230:9 237:4 275:21 276:9 285:19 <b>problem</b> 69:2 86:6 100:22 120:20 130:15 151:16 160:9 177:17,18 178:1 186:14 267:25 276:2 <b>problematic</b> 276:25 <b>problems</b> 23:10 85:23 89:24 97:10 121:2 122:13 160:19 161:13 189:19 199:2 244:22 246:5 272:9 276:11 <b>procedures</b> 180:11 192:25 <b>proceed</b> 94:16 <b>proceeding</b> 11:24 36:19 46:1,9 47:22 48:9 49:1 49:17 50:10 <b>proceedings</b> 36:18 47:24 125:13 289:3,5,7 <b>proceeds</b> 205:17 <b>process</b> 38:14 54:22 60:16 67:21 79:18 80:3 81:6 105:7 116:18 196:21 221:6,9
---	--	---	--

**[process - public]**

284:22 285:3 <b>processes</b> 32:3 48:1 60:10 63:23 66:23 68:23 80:2 84:18 85:8 94:8 215:5 220:15 229:9 <b>product</b> 59:12 68:22 101:6 112:8 <b>productive</b> 282:6 <b>professional</b> 92:1 92:5,7 93:5 95:2 98:5,7 102:25 107:21 125:21 127:1 133:22 135:4 158:24 178:20 274:17 284:17 <b>professionals</b> 88:17 100:2,22 125:17 126:18 177:5 189:12 <b>professor</b> 87:21 112:20 <b>profound</b> 189:5 <b>profoundly</b> 225:13 <b>program</b> 26:8 74:13,14 90:18 102:23 110:21,22 111:1 112:4,4 113:20 114:6 118:1 119:1 <b>programs</b> 112:5 118:7,16 <b>progress</b> 169:19 <b>prohibited</b> 154:24 158:25 <b>prohibiting</b> 251:9 <b>prominent</b> 284:1	<b>promise</b> 221:17 <b>promised</b> 139:3,23 <b>promote</b> 205:10 247:18,20 <b>pronouns</b> 14:23 15:3 <b>proof</b> 242:15,18 242:20 <b>proper</b> 35:14 <b>proportion</b> 203:4 <b>proposing</b> 217:17 <b>proposition</b> 213:2 <b>prove</b> 74:22 133:16,18 217:18 217:19 241:22 <b>provide</b> 16:23 18:21 25:5 63:19 72:15 88:9 96:10 115:10 119:1 130:24 143:8 170:12 183:8 <b>provided</b> 15:23,25 33:4 47:17 57:17 71:15 105:4,6 119:10,20 139:20 167:20 259:7 <b>providing</b> 26:5 42:15,20 97:9 100:14 104:14 110:23 135:16 137:3 165:8 166:9 167:12 170:4 208:9 259:20 284:15 285:12 <b>provision</b> 23:22 <b>provisionally</b> 106:23 <b>prudent</b> 204:12 <b>psychi</b> 80:17 <b>psychiatric</b> 15:23 16:1,9 37:17	39:15 89:22 100:15 112:16 120:17,18 135:24 160:19,24 161:3 186:14 190:17,21 228:22 244:22 <b>psychiatrist</b> 66:21 69:3 78:25 79:16 80:1,20 84:3,3 171:18 172:17 222:8 257:19 263:24 277:9 280:18 <b>psychiatrists</b> 78:24 79:16 83:22 84:5 <b>psychiatry</b> 78:22 79:10 80:6 83:14 83:20 84:8 88:13 112:14 113:11,13 113:14 114:10 229:5 257:13 263:19 <b>psycho</b> 276:1 <b>psychoanalysis</b> 80:6 <b>psychodynamic</b> 80:6 <b>psychologic</b> 261:5 261:11 <b>psychological</b> 30:25 100:15 161:13 199:12,15 215:8 271:25 <b>psychologically</b> 27:18,25 31:8 <b>psychologist</b> 63:19 <b>psychology</b> 16:3 80:7,13 82:14,18 84:14	<b>psychopathology</b> 79:22 276:4 <b>psychosocial</b> 117:7 133:12 200:10 215:17 220:10,15 244:3 246:2 <b>psychotherapeutic</b> 63:22,23 138:5 149:6 156:25 180:1,13 186:16 209:16 270:14 <b>psychotherapy</b> 99:14,18,18 107:10 124:25 135:25 139:1 165:8 166:10 167:13 181:3,8 182:10,12 183:2 186:5,11 202:15 203:8,12,18 204:16 208:4,8,10 208:14 212:1 255:19 270:20 <b>puber</b> 220:5 <b>pubertal</b> 214:12 215:18,19 216:14 216:18 <b>puberty</b> 87:9 91:6 93:16 95:15 156:22 213:9,10 213:18,22 214:1,2 214:4,5,9,10,10 215:2,23 216:15 216:16 217:16 218:14,21,25 219:8 220:6 <b>public</b> 69:4,4 148:12 248:10 272:11
---	---	--	--

**[publication - rapidity]**

<b>publication</b> 76:3 94:6 101:15 103:17 189:10 201:1 <b>publications</b> 45:19 107:8 114:17 236:3 <b>publicly</b> 95:25 <b>publish</b> 100:18 175:16,24 176:17 177:21 <b>published</b> 56:15 60:2,5 76:25 94:7 94:7,23 104:12 109:20 114:15 122:15 133:11 174:7,9 175:12 190:11 211:18 <b>puerile</b> 215:11,17 215:23 220:11 <b>pull</b> 108:15 282:15 <b>purpose</b> 80:13 <b>purposes</b> 19:10 31:7 46:7 80:15 85:16 149:17 <b>pushing</b> 279:2 <b>put</b> 14:6 65:18 77:18 99:13 101:12 159:13 163:7,8 195:2 217:3,21 223:13 223:16 277:19 <b>putting</b> 162:25 172:10 195:10 223:10 230:15 <b>puzzled</b> 240:16 <b>pyscho</b> 63:23	<b>quality</b> 126:24 <b>quarter</b> 58:20 <b>question</b> 18:2,6,12 18:20 24:3 27:20 28:2 34:21 35:22 38:2 39:24 41:22 43:11,21 44:1,9,22 45:1,6,7,11,16,25 46:13,18 48:11 49:14,20,23 50:18 52:18 53:2,4,5 54:23 57:13 58:1 58:2,24 60:13,20 61:18,24 66:12,15 66:24 67:1,11 68:2 72:2,10 76:18,21 78:3,9 80:8 85:14,25 86:7 87:8 92:11 93:22 94:4,5,16,16 95:18 96:9 97:1 97:16 104:5,6 105:8 106:8,16 108:15 110:8 111:13 114:2 118:10 119:6 120:9,22 124:19 125:11 126:23 134:12,16 136:21 136:23,24 137:12 137:19 138:13 145:13 147:5,7 150:4,22 151:1,2 151:10 152:13,24 153:3,5,11,23 154:22 155:13 156:12 157:7 159:18 163:25 164:13 165:15,22 168:24 171:9 172:6 173:12,20	176:16 178:8,10 178:16 179:12 184:19 185:4,8,11 185:22,23,23 187:3,4 191:20 193:14 194:17 195:17 203:7 206:16 207:6 209:10 211:6,11 212:20 213:16,20 218:10,14,17,20 218:23 219:1,4,6 221:13 224:9 232:15 236:1 237:19 238:19,21 239:2,12,25 244:13 249:18 253:18 256:18 259:13 260:10 261:17 285:7 <b>questioner</b> 207:22 <b>questioning</b> 80:15 105:18 113:9 132:19 174:15 286:9 <b>questions</b> 17:21,22 46:7 47:8 53:11 55:4 59:6 75:15 87:3 90:24 91:12 92:20 94:11 95:23 105:21 114:19 130:6 137:13 148:17,23 150:16 151:1 164:2,6 192:19 196:7 218:12 241:15 268:22 282:13 286:8,13,18,21,25 287:5 <b>quickly</b> 221:16 270:11 274:2	<b>quite</b> 46:22 56:23 136:7 186:22 229:4 260:17 284:1 <b>quote</b> 46:24 89:9 100:8 106:5 114:8 148:1 213:10 223:10 228:10 229:16 284:1 <b>quoted</b> 40:21 41:3 79:20 168:20 194:3 285:11 <b>quotes</b> 171:25 172:4,5 <b>quoting</b> 230:1
		<b>r</b>	
		<b>r</b> 15:2,2 37:24,25 197:23,23 <b>rafferty</b> 146:8 <b>rafters</b> 273:6,14 274:21 <b>raise</b> 43:24 <b>raised</b> 43:23 142:24 174:14 <b>raising</b> 179:12 191:20 192:10 <b>ran</b> 112:2 <b>randomized</b> 270:17 <b>range</b> 98:5 159:22 160:1 195:3 <b>ranges</b> 98:7 <b>rapid</b> 114:22 115:10,21 116:1,5 116:16,23 119:1 119:10,20,25 120:7,15,25 121:6 124:11,16 135:16 137:3 <b>rapidity</b> 127:17	
<b>q</b>			
<b>quadruple</b> 98:3 <b>qualification</b> 213:17			

**[rapidly - record]**

<b>rapidly</b> 114:21 125:6 220:13 <b>rarely</b> 178:21 <b>rate</b> 183:22 184:1 184:8,9,22,25 185:2,8,11,22 190:17 192:15 206:7 242:25 243:1,5 <b>rates</b> 183:17 185:17,18 186:25 187:8,11 190:19 190:20,21 271:6 <b>ray</b> 225:6 <b>rbrooks</b> 4:21 <b>reach</b> 177:8,8 <b>reached</b> 38:22 <b>reacted</b> 214:7 <b>read</b> 46:14,16 54:18,24 56:14 60:1 66:14,16 68:25 69:7 96:6 96:16 104:24 125:13,22 137:21 137:24 143:1 144:3,6,25 145:1 145:10,13,20 152:24 153:1 156:18 164:5,23 165:1,25 169:11 170:8 192:23 194:23 195:8,9,25 196:15 198:22 199:9 202:5 204:13 205:6,8,9 219:11,14,20 228:20 230:6 236:22 237:19 239:22 243:14 245:8 281:16 285:17,19 288:5	<b>reader</b> 195:25 <b>reader's</b> 172:12 <b>reading</b> 72:24 95:13 205:7,8 214:25 283:24 <b>ready</b> 145:19 <b>reality</b> 221:11 <b>realize</b> 118:19 134:13 135:8 <b>realized</b> 214:25 <b>really</b> 17:3,4 29:5 32:9 42:18 50:6 55:1 60:10 81:11 86:5 95:16 98:10 98:13,16 102:11 104:4 107:11,13 114:9 123:17 128:7 134:18 139:21 141:17 180:16 181:16,21 185:10 194:17 200:6,23 201:2 202:4 209:14 211:2 236:10,15 246:7 248:12 264:10 271:8 277:7 <b>rearranged</b> 77:5 <b>reason</b> 17:2 27:19 145:6 147:15 156:8 162:11 170:14 174:22 177:3 193:8 199:6 <b>reasonable</b> 73:5,7 73:8,12 95:18 158:23 174:17 <b>reasonably</b> 20:10 <b>reasons</b> 130:16 <b>reassignment</b> 16:25 23:8 27:5 28:22 29:4,7,10,13	29:19 49:6 109:18 135:21 177:11 190:13,16 191:1 260:21 <b>reassurance</b> 125:23 <b>rebuttal</b> 37:22 59:3 61:19 62:4,7 62:11 <b>recall</b> 21:15,19,25 22:4,11 26:11,24 27:2 35:9,10 50:14,16 61:3 62:22 66:9 68:7,9 83:10,11 87:7 110:2,9 127:6 194:16 218:8,9 226:12 255:4 256:13 274:25 285:20 <b>receive</b> 24:1 25:17 25:22 <b>received</b> 31:14 36:15 <b>receives</b> 106:2 <b>receiving</b> 284:8 <b>recertified</b> 79:2 <b>recess</b> 51:15 108:5 155:22 207:15 254:22 286:4 <b>reco</b> 26:9 <b>recog</b> 173:19 <b>recognize</b> 141:11 141:11 173:19 252:19 261:7 272:24 <b>recognized</b> 114:19 148:8 225:18 <b>recognizes</b> 244:18 <b>recommend</b> 121:13 130:22	131:14 205:10 <b>recommendation</b> 23:12 24:17 25:16 25:21 28:16,25 39:16 40:2 49:9 132:1,4,6,20 138:21 139:6,7 190:15 210:18 266:5 <b>recommendations</b> 15:24 16:21,23 17:9 28:6 118:8 121:13 <b>recommended</b> 23:5,25 24:5,9,24 25:15,23 26:10,19 27:2 28:2 49:5 132:18 138:1,8,15 138:18 141:2,6 209:2,4 210:9,14 <b>recommending</b> 117:16 208:9 <b>recommends</b> 125:7 <b>reconcile</b> 161:11 251:23 252:6,12 252:17 254:7 <b>reconsidering</b> 60:7 210:19 211:19 <b>reconstituted</b> 266:9 <b>record</b> 11:3,8,23 14:6,7,25 36:25 46:16 48:22 51:13 51:16 55:9 66:16 102:17 108:3,6 137:22 153:1 155:20,23 169:16 207:14,16 251:14 254:7,20,23 256:7
---	---	--	---

**[record - reports]**

256:9 263:4 268:7 285:25 286:2,5 287:11 289:6 <b>recorded</b> 11:9 19:12,18 <b>recording</b> 11:6 259:11 260:24 <b>records</b> 142:9 191:15 <b>recross</b> 286:9 <b>recruited</b> 52:4 <b>reduce</b> 277:19 <b>redundancy</b> 195:22 196:2 <b>reexamine</b> 90:3 <b>refer</b> 61:1 109:14 150:2 164:19 167:25 172:1 183:9 200:12 229:14 260:10 <b>reference</b> 41:5 168:7 192:21 237:3,12 275:22 276:9 <b>referenced</b> 28:13 256:6 <b>referred</b> 126:17 246:15 <b>referring</b> 19:21 26:10 34:11 61:5 64:16 73:21 120:3 144:22,23 147:19 219:1 258:4 266:1 <b>refers</b> 73:19 172:21 <b>refine</b> 136:22 <b>refinement</b> 71:18 <b>refinements</b> 72:6 <b>reflection</b> 69:13 <b>reflections</b> 60:3 77:10	<b>refresh</b> 50:23 69:19 <b>refusal</b> 183:11 <b>refuse</b> 183:8 <b>refused</b> 38:8 <b>regarding</b> 21:18 21:20,23 22:2 45:13 90:15 170:1 <b>regardless</b> 105:11 238:4 240:18 <b>regular</b> 167:9 <b>reidentified</b> 38:12 <b>reinforce</b> 151:6 <b>reinforces</b> 154:1 <b>reinforcing</b> 151:14 <b>reinhardt</b> 3:10 12:15,16 <b>reisbord</b> 7:16 257:1,4,7,10 258:9 <b>rejected</b> 169:12 <b>related</b> 11:20 42:17 43:4 44:25 82:9 <b>relationship</b> 146:6 146:6 180:1 243:18 <b>relationships</b> 236:18,21 239:10 239:14,22 243:10 243:10 244:2,5 245:5 <b>relative</b> 191:18 280:25 289:12 <b>relatively</b> 211:3 <b>relevance</b> 71:20 72:19 173:20 <b>relevant</b> 32:21 49:14 57:19,25 165:22 199:25 <b>relief</b> 31:5	<b>religious</b> 31:20 <b>rely</b> 61:10,13 221:9 264:17 277:12,13 <b>remains</b> 36:16 75:9,9 <b>remarks</b> 218:11 <b>remember</b> 18:10 23:11 42:19 53:11 53:14,15 75:10 123:1 194:1 274:23 <b>remind</b> 19:5 <b>reminded</b> 56:24 219:5 <b>reminding</b> 179:4 <b>remorse</b> 139:22 <b>remote</b> 2:20 <b>remotely</b> 2:22 11:5 <b>remove</b> 132:2 277:25 <b>removed</b> 116:9 164:24 165:12 195:13,14 199:6 214:5,6 <b>renamed</b> 110:19 <b>repaginating</b> 75:18 <b>repeat</b> 21:20 27:12 29:12 32:12 46:13 47:4 53:4 73:22 152:17,20 157:7 175:18 190:2 195:23 207:2 261:7,9 268:22 281:24 <b>repeatedly</b> 23:23 24:5 187:4 <b>rephrase</b> 18:8 43:11 80:7	<b>replaced</b> 193:23 225:9 <b>report</b> 37:17,22 42:1,7,10 43:8,16 45:9 53:1,11,12,17 53:20,23,24 54:6,8 55:10,11 58:14,22 59:3,10,16,24 61:1 61:10,22 62:4,5,8 67:23 68:25 70:3 70:14,20,23 71:5,8 71:9,12,13,18,19 71:24 72:1,4,6,14 72:17,20,22 73:1 75:15,16 79:20 92:24 96:3 108:14 128:17 137:20 143:17 144:11 164:3,14,23 165:13,16,18,20 175:11 180:19 188:1 193:20 198:3,17 199:7,20 220:21 281:16 282:14 <b>reported</b> 1:23 83:1 125:4 <b>reporter</b> 2:25 11:19 13:19 18:25 46:14 51:3 66:14 69:25 152:23,25 218:1 256:22 258:12 260:15 261:22 263:12 265:12 267:2,23 269:1,14 270:9 271:3 272:19 275:5 278:5,24 279:19 289:2 <b>reports</b> 61:19 69:7 71:15 72:9,11,12
--	---	--	---



**[reports - roger]**

96:25 124:23 127:4,25 128:5,14 129:13 131:7,8 135:17 204:15 269:5 <b>represent</b> 12:3 65:15 95:1 130:8 148:12 163:24 164:20 198:19 <b>representation</b> 124:10 <b>representative</b> 218:20 219:7 <b>representatives</b> 173:19 <b>representing</b> 13:1 13:11,14 33:9 34:16 94:22 165:15 <b>represents</b> 116:21 128:15 245:21 <b>reproductive</b> 234:9 235:2 <b>republished</b> 200:18 <b>repudiate</b> 277:24 <b>reputation</b> 130:9 <b>request</b> 110:12 <b>requesting</b> 166:6 <b>require</b> 92:25 <b>required</b> 266:5 <b>requirements</b> 136:23 146:20 147:1 196:5 <b>requires</b> 74:15 116:12 134:6 146:1 <b>reread</b> 58:14 <b>research</b> 98:2,9 122:9,24 158:7,12 161:21 175:24	211:25 212:3 <b>researcher</b> 225:16 <b>reserve</b> 87:22,24 88:21 110:15,21 286:8 <b>reside</b> 210:3 <b>residency</b> 112:16 <b>resident</b> 80:13 89:1 112:23 <b>residents</b> 88:12,24 89:11,12 113:14 263:18,19 <b>resisting</b> 125:9 <b>resocialized</b> 145:3 146:2,5 <b>resolved</b> 38:21,24 39:3 <b>resources</b> 183:10 <b>respect</b> 52:7 132:23 170:25 210:22 233:19 <b>respected</b> 93:11 107:16 137:14 <b>respectfully</b> 281:22 <b>respond</b> 96:6 238:18 254:11 <b>responded</b> 184:24 <b>responding</b> 103:10 <b>response</b> 216:14 216:18 218:14 <b>responses</b> 96:24 162:16 <b>responsibility</b> 133:22,22 189:11 235:4 279:1 <b>responsible</b> 132:14,15 183:3 252:21 <b>restart</b> 128:25	<b>restate</b> 43:10 <b>restatement</b> 200:23 <b>result</b> 79:23 161:8 180:4 <b>retained</b> 51:19,22 51:24 57:10 68:4 287:15 <b>retention</b> 57:14 <b>rethinking</b> 139:15 <b>retrospective</b> 154:13 <b>return</b> 154:4 204:16,19 214:5 221:15 222:17 <b>returned</b> 258:16 <b>returning</b> 174:10 <b>reversed</b> 214:17 <b>reversibility</b> 214:24 218:21 <b>reversible</b> 214:4 215:12,14 219:9 <b>review</b> 58:21 59:3 59:19 60:14 62:11 90:5 126:21 127:5 <b>reviewed</b> 59:7,9 59:16 61:2,8,22 62:7,18 73:1 142:9 <b>reviewing</b> 187:25 <b>reviews</b> 104:11 <b>rgreen</b> 7:11 <b>rhetoric</b> 216:1 <b>rich</b> 214:8 <b>richard</b> 266:6 <b>rid</b> 177:4 201:19 266:12 <b>right</b> 36:25 49:16 51:4,12 53:1 54:9 57:7 59:8 63:3 67:13 68:10 73:25	74:5 85:17 90:23 92:2 108:2 119:2 124:6 127:10,15 128:12 140:23 157:6 159:6 163:15 174:15 181:6 182:1 185:18 191:7,9,10 192:8 201:6 203:16 207:10 209:17 211:23 212:12,16,21 213:3 216:23,24 218:24 229:9,24 230:18 250:21 255:17 256:1 279:24 283:3,10 284:6 285:20 286:8 <b>rights</b> 38:11 135:7 246:24 248:18,24 250:18,23 251:22 253:23 <b>rigorous</b> 267:25 268:12 <b>ring</b> 170:5 <b>ringing</b> 62:24 63:2 <b>rise</b> 98:11 <b>risen</b> 111:3,4,5 <b>risk</b> 74:2,3 117:7 158:3 195:3 224:13,14 <b>risks</b> 46:25 221:8 223:9 <b>road</b> 4:20 <b>robert</b> 63:13 <b>roberta</b> 7:6 <b>rochester</b> 211:5 <b>roger</b> 4:17 13:13 63:6 286:12
--	--	--	--

**[rogers - sectional]**

<p><b>rogers</b> 6:17 13:7,7 287:3,4 <b>role</b> 77:10 107:4 107:15 130:22 138:20 143:6 174:10 <b>roles</b> 189:2 <b>romance</b> 233:9 234:22 <b>romances</b> 246:6 <b>romantic</b> 235:23 236:18,20 243:9 243:18 <b>room</b> 29:23 139:12 178:10 197:2 <b>rose</b> 45:3 <b>rotated</b> 80:12 <b>rotation</b> 196:25 <b>rounds</b> 88:20 114:1 <b>route</b> 217:15 <b>row</b> 89:22 <b>rule</b> 36:22 82:24 268:8 <b>rules</b> 17:17,20 151:19 177:20 <b>run</b> 27:23 133:14 149:11 153:18,18 179:21 250:3 251:4,19 276:22 <b>runaway</b> 238:11 <b>running</b> 251:9 <b>ruth</b> 109:17,19,20 109:21,25 258:6 260:20 <b>ruth's</b> 260:23 261:3,4,10 <b>rutherford</b> 109:13 109:15,19,25 258:6</p>	<p><b>s</b> <b>s</b> 15:1 23:5 37:24 98:3 256:12 <b>sadly</b> 139:10,10 <b>sadness</b> 160:8 <b>safe</b> 195:2 <b>safer</b> 59:4 61:20 73:2 187:23 188:22 281:18 284:11 285:3 <b>safer's</b> 61:8,14 62:11 187:25 188:2,16 283:21 285:8 <b>salaried</b> 111:16 <b>salient</b> 75:9 <b>sampling</b> 129:21 <b>sand</b> 134:7 <b>sanity</b> 222:19 <b>sasha</b> 90:10,20 255:25 <b>satisfy</b> 284:22 <b>satisfying</b> 245:4 285:10 <b>save</b> 131:19 <b>saved</b> 40:5 <b>saw</b> 17:7 82:21 86:24 91:1,3 139:2 167:5 271:15,21 273:13 <b>saying</b> 26:24 80:19 95:17 124:5 127:4 129:19 131:12 132:9,17,22,24 133:11 136:6,8 143:17 155:5 180:10 189:20,24 190:1,7 192:2,4 197:3 214:22 220:18 226:21 235:5 248:13</p>	<p>260:8 264:10 267:5 271:5 276:17 <b>says</b> 63:8 64:1,4,6 64:7 75:20 76:10 91:16 125:4 137:23 143:23 149:15 197:17 241:8 <b>scandinavia</b> 177:18 <b>scanning</b> 202:21 <b>scene</b> 98:18,19,19 <b>schema</b> 202:1 <b>school</b> 1:10 2:11 6:14 7:3 13:8 74:18,19 87:22,25 88:9 145:4,22 147:23 149:13,14 149:15 196:25 249:3,15 250:4,6 287:4 <b>science</b> 30:17,23 32:13 42:22 47:6 47:13 74:1 75:1,1 75:6 98:16,16 117:3,21,22 118:2 132:7 134:18 135:10,13 143:9 186:2 189:11,13 189:22 243:5 252:2,19 277:12 277:13,14 282:2 <b>sciences</b> 277:13 <b>scientific</b> 47:12 71:16 73:5,16,25 92:20 93:12 97:3 97:5 98:10,13 99:6 101:22 102:4 117:5 124:8 129:21 130:14</p>	<p>132:4,6 133:7 135:5,14,17 137:7 137:14 156:19 185:23,24 186:8 212:2 248:9 264:8 280:12 <b>scientifically</b> 57:24 104:10 206:3 212:16 224:3 <b>scope</b> 14:10 231:25 254:15 <b>screen</b> 63:5 91:23 108:18 143:22,25 156:15 164:10 201:16,19 235:16 <b>screening</b> 135:23 <b>scroll</b> 76:2,15 <b>scrolling</b> 63:12 76:4,5 <b>scrutiny</b> 264:8 <b>se</b> 45:22 85:4 88:6 89:17 111:24 134:17 202:4 <b>sealed</b> 35:17,20 44:3 <b>searched</b> 25:8 <b>second</b> 92:16 144:25 168:24 192:23 197:14 212:22 219:5 <b>secondary</b> 1:10 2:11 6:14 7:3 13:8 146:17 287:4 <b>section</b> 198:2,6 201:9,22 211:24 235:19 <b>sectional</b> 160:21 181:17 189:17,23 190:6,8 191:2 243:24</p>
--	---	---	---



**[sectors - sexual]**

<b>sectors</b> 248:11 <b>see</b> 21:14 50:20 63:11 64:1,3,21 65:1,2,3,11,12,12 81:7 85:8,19,23 86:6 87:6 108:25 118:5 130:10,13 131:12,17 132:11 133:8 134:3,13,24 138:6 143:21 144:12,20 146:11 146:21 147:4 148:15 149:25 150:3 153:24 154:10 155:10 157:3 166:25 167:2,6 168:1,5,9 171:18 172:18 176:7 178:4,14 179:16 180:5,11 181:20 182:7 191:4 196:10,19 197:18 198:9 199:22 200:14 204:22 207:21 210:20,21 213:11 215:23 217:6,18 217:24 218:2,4,18 220:2,9,11 222:4 222:23,24 223:1 225:20 233:22 234:10 235:14,24 241:14 245:17 247:2 248:13,16 257:19,22 263:21 264:5,9,15 269:6 270:1,20 271:12 273:5 274:1 278:9 280:16 283:1,1 284:5	<b>seeing</b> 84:22,25 89:3,8 90:25 182:23 <b>seek</b> 29:10,13 249:13 <b>seeking</b> 22:20,24 23:2,16 33:7 130:2 171:2 251:4 254:2,9 274:19 <b>seen</b> 87:2,14,18 90:17 96:2 126:24 129:16 166:19,23 167:4 209:3 246:6 276:11 <b>sees</b> 60:25 89:2 <b>segm</b> 99:1,2,2,4,15 99:16 100:12 101:4,11 103:12 103:14,15 104:6,8 104:12,19 105:2 105:24 106:2,10 106:21 107:2,21 255:2,17,21,23,24 259:7,14,16 260:10 <b>select</b> 72:11 <b>selected</b> 71:19 112:2 <b>selection</b> 59:12 130:4,7,15,20 <b>self</b> 225:3 276:7,8 <b>seminar</b> 112:25 113:7 263:18 <b>seminars</b> 88:9,12 <b>sends</b> 113:14 <b>sense</b> 18:9 47:12 69:11 71:16,23 89:5 101:8 103:16 107:10 114:22 148:18 160:8 169:10 210:2	224:12 229:12 234:1 247:6 <b>sensibilities</b> 138:23 <b>sensitive</b> 195:19 196:2 <b>sent</b> 99:7 122:8,13 <b>sentence</b> 55:22 108:21 137:23 145:1 156:18 192:23 193:3 197:14,14 205:6,7 226:13 228:11 245:23 247:13 279:13 283:25 284:6 <b>sentences</b> 214:25 <b>separate</b> 60:10 173:21 189:21 <b>separated</b> 84:17 <b>separately</b> 209:20 <b>separating</b> 152:12 <b>separation</b> 273:2 <b>september</b> 15:9 17:13 21:17 22:1 140:23 <b>sequence</b> 214:13 259:8 <b>sequentially</b> 164:4 <b>series</b> 72:11 96:19 107:6 137:12 244:3 256:11 <b>serious</b> 160:4 172:15 <b>service</b> 88:16 137:4 210:14 <b>services</b> 25:14 26:5 97:9 100:15 100:15 110:23 115:6 148:3 166:6	<b>session</b> 59:18 183:7 <b>set</b> 75:2,3 104:14 106:7 151:22 181:5 236:1 245:14 282:2 284:3,10,11,24 289:4 <b>sets</b> 128:4 <b>setting</b> 43:2 44:20 182:2 <b>settings</b> 230:9 <b>seven</b> 89:21 132:1 134:2,3,3 147:3 170:18 250:24 287:14 <b>seventh</b> 285:15 <b>severe</b> 161:18 <b>sex</b> 16:25 19:12,18 23:7,21 27:5,8 28:22 29:3,6,10,13 29:19 49:6 88:10 89:23 93:17 98:1 98:10 109:18 135:21 138:2,8,11 139:16 149:5 156:25 177:11 182:19,25 190:12 190:16 191:1,18 196:9,16,22 197:9 197:11 217:14,15 223:3,3,4 224:14 233:9 236:11 257:24 258:19 260:21 <b>sexual</b> 60:6 88:23 89:24 97:9,22 98:8 199:3,12 200:3 215:9,20,21 224:19 231:24 232:7,9 234:10,15
---	---	---	---

[sexual - sorry]

235:23 236:8 237:4 246:10 260:19 272:25 277:23 278:7 <b>sexuality</b> 97:3,6 97:23,24 113:2 257:21 <b>sexually</b> 180:15 236:16 <b>shaking</b> 19:1 <b>shame</b> 231:8,12,18 <b>shannon</b> 6:17 13:7 287:3 <b>shape</b> 200:10 <b>shaped</b> 274:3 <b>share</b> 50:20 <b>shared</b> 256:3 <b>shares</b> 212:2 <b>sharing</b> 34:24 126:2 <b>sharp</b> 172:23 <b>shoals</b> 4:20 <b>shocked</b> 68:25 <b>short</b> 51:10 116:22 117:6 136:3 153:17,24,24 196:3 276:22 <b>shortened</b> 272:22 <b>shorter</b> 175:5 196:3 277:14 <b>shortest</b> 211:7 <b>shorthand</b> 2:25 14:11 289:1,7 <b>show</b> 39:25 76:16 248:7 <b>showed</b> 272:12 <b>shower</b> 25:7 <b>showing</b> 135:15 143:25 175:16 <b>shown</b> 160:22 195:1	<b>shows</b> 162:6 <b>shumaker</b> 109:13 <b>shuman</b> 6:16 7:5 <b>shumanlaw.com</b> 6:22 7:11 <b>sic</b> 15:19 18:6 37:24 39:11 133:17 145:4 172:10 190:14 199:1,13 <b>sick</b> 271:14 <b>side</b> 32:15,22 33:6 33:9 49:18,25 50:10,11 57:23 117:19,19 143:7 149:12 150:25 184:8 186:2 254:2 282:1 <b>sides</b> 32:19 58:2 129:20 <b>siefert</b> 37:24,25 38:4 <b>signature</b> 70:15 289:20 <b>signed</b> 28:5,10 64:24 164:25 <b>significant</b> 23:9 189:19 <b>signs</b> 274:20 <b>similar</b> 35:13 114:5 165:15 175:19 232:23 233:1 <b>similarity</b> 72:22 <b>similarly</b> 154:18 <b>simple</b> 152:13 155:11 161:15 <b>simplest</b> 72:13 <b>simplicity</b> 277:20 <b>simplify</b> 67:1	<b>simply</b> 68:1 120:18 131:24 143:22 <b>simultaneous</b> 157:20 252:7 <b>sinai</b> 283:22 284:21,25 <b>sitting</b> 75:25 89:3 200:2 257:15 268:18 285:8 <b>situation</b> 41:23 183:2 186:20 203:21 204:11 <b>situations</b> 210:6 <b>six</b> 84:22 87:4,6 89:3 136:13,14 179:22 180:7,8 242:25 250:24 265:14 <b>skepticism</b> 134:22 <b>skeptics</b> 264:18 <b>slashed</b> 258:24 <b>sleeping</b> 20:9 <b>licer</b> 6:16 7:5 <b>slide</b> 271:15 <b>slow</b> 103:22 <b>slowly</b> 21:22 261:9 <b>small</b> 136:1 <b>smaller</b> 144:6 <b>smile</b> 73:17 75:12 159:14 <b>social</b> 116:7 138:2 141:1,2,8,10,22 142:3 148:8,17 156:21 158:1,22 160:8 161:1,4 189:2 215:8 246:5 246:24 <b>socialization</b> 35:2 209:2	<b>socialize</b> 117:11 146:20 <b>socializing</b> 180:8 <b>socially</b> 34:18 194:11 250:5 <b>societal</b> 31:25 <b>societies</b> 92:1,5 98:6 <b>society</b> 42:22 92:8 92:18,21 93:5 97:2,5 98:1,2,4,10 98:20 99:10 102:25 148:11 160:20 173:18,19 215:6 224:17,19 244:17,18,24 245:2 <b>soft</b> 29:1 <b>solution</b> 276:24 277:1 <b>solutions</b> 11:18 287:15 <b>solved</b> 177:18 <b>solvency</b> 112:6 <b>solving</b> 160:9 <b>somebody</b> 32:16 74:14 129:5 221:20 263:21 273:21 274:14 279:23 <b>somewhat</b> 32:13 68:21 253:7 <b>son</b> 34:17 197:4 <b>soneeya</b> 23:5,24 28:13 30:8 49:7 49:21 <b>soon</b> 207:8 <b>sophisticated</b> 216:8 220:18 <b>sorry</b> 20:23 23:6 23:25 25:3 26:10
--	---	--	--

[sorry - statement]

34:7 35:11 37:7 37:14 50:6 55:17 58:17 76:11 78:8 81:8 95:10 97:17 99:17 102:13 104:3,3 108:23 118:9,24 119:9,24 121:15 124:19 126:11,13 127:19 140:10,12,14,19 143:16 149:9 150:16 151:14 157:7,22 166:23 169:8 170:3 174:21 175:18 178:7,12 181:14 188:18 190:4 196:8,12 197:14 201:11,14,18,21 203:7 206:14 212:18,21,22 213:4,24 219:10 222:11 226:25 231:17 237:1 238:11,13 244:12 248:23 258:10 259:6,18 260:7 261:10 265:2 267:20 274:11 <b>sort</b> 71:18 98:8 102:19 103:25 122:4 190:2 210:7 210:23 222:3 <b>sought</b> 31:5 35:14 <b>sounded</b> 152:14 <b>sounds</b> 17:18 115:21 133:1 <b>source</b> 111:24 125:3 161:16 181:23 197:15	<b>sources</b> 125:12 248:3 <b>southern</b> 11:14 <b>speak</b> 18:24 21:22 161:8 201:1 217:5 217:5 231:17 243:5 272:11 281:22 <b>speaking</b> 113:3 157:20 252:7 260:25 264:20 265:20 286:12,13 <b>special</b> 25:6 80:22 107:2 <b>specialized</b> 79:12 80:9,11,16 81:1,3 81:4,10,13 83:8,13 <b>specializes</b> 172:25 <b>specialty</b> 83:23 93:9 125:6 <b>specific</b> 21:14 41:22 55:3,3,20 58:24 68:9,11 72:25 118:10 195:17 <b>specifically</b> 59:6 67:15,20 110:9 <b>speculate</b> 184:12 <b>speculation</b> 159:12 183:4 184:5 185:4 186:2 187:1 247:11 <b>spell</b> 14:24 <b>spend</b> 71:4 83:16 85:2,3,4 88:24 89:3 143:10 172:22 209:18,19 <b>spent</b> 75:7 86:3 194:13 <b>spoken</b> 126:15,17 163:2 188:9,14	<b>sponsors</b> 101:5 <b>spontaneous</b> 266:15 <b>spontaneously</b> 266:22 <b>sport</b> 144:13 149:11,12 <b>sports</b> 42:3,8,25 43:3,5 81:24,25 144:14 150:19 157:13 158:8 159:9 251:20 <b>spring</b> 37:5,6 <b>srogers</b> 6:22 <b>sruti</b> 4:5 12:20 <b>sswaminathan</b> 4:11 <b>stability</b> 224:11 <b>stable</b> 234:11 244:2,5 245:4 <b>staff</b> 28:8 211:12 273:20 <b>stage</b> 65:25 193:5 193:19 198:17 206:5 213:15 217:1 <b>stages</b> 84:18 <b>stamp</b> 278:10,11 278:16,18 <b>stamps</b> 278:12 <b>stand</b> 30:17 59:12 204:24 219:25 253:5,7 259:7 268:17 <b>standard</b> 73:21,24 103:2 266:3 <b>standards</b> 39:23 118:13 225:25 265:15 266:10 283:21 284:4,9,10 284:10,11,14,16	284:16,23,24 285:10 <b>standing</b> 269:18 <b>stands</b> 263:8 <b>start</b> 14:5 21:23 123:10 213:1 <b>started</b> 110:12 218:25 219:8 <b>starting</b> 12:6 50:25 102:9 139:1 201:9 215:20 217:4 <b>starts</b> 63:7 75:17 198:3 237:6 <b>state</b> 1:9,12,14 2:9 2:12,14 5:4,16 11:13,22,24 13:12 14:24 21:9,18 22:2,6 30:17,23 31:10 32:3,8,13,16 32:18,20,23 33:1,2 33:23 34:24 42:11 46:19 47:6,17 56:19 64:20 83:2 83:2,6 117:3 126:5 134:18,25 139:12 149:13 164:16 170:3 215:11 221:16 228:24,24,24 286:16 288:11 289:2 <b>stated</b> 84:4 163:22 163:23 174:21 221:4 222:20,21 <b>statement</b> 35:10 167:11 204:24 243:22 251:21 265:22 267:9,15 268:3 269:8 270:3 270:23 272:2
--	--	---	---

**[statement - summarize]**

273:10 275:13,20 275:21 <b>statements</b> 214:21 252:22 262:15,18 264:23 265:7 268:16,17 278:15 279:10 280:7 <b>states</b> 1:1 2:1 103:24 104:15 120:7 124:12,16 125:3 135:16 147:22 177:19,19 177:20,22 <b>stating</b> 47:5 <b>statistical</b> 74:4 <b>statistics</b> 130:14 <b>status</b> 107:15 246:13 <b>statute</b> 251:18 <b>stay</b> 54:19 <b>stella</b> 255:25 <b>stephen</b> 1:19 2:21 8:3,11,16 11:10 13:22 15:1 64:6,8 106:18,18 256:11 287:12,13 288:4 288:15 <b>steptoe</b> 6:5,11 13:1 <b>sterilizing</b> 180:11 180:14 <b>stick</b> 205:14 <b>sticking</b> 45:24 <b>stigma</b> 158:21 161:8 <b>stigmatizes</b> 158:17 <b>stimulate</b> 54:18 <b>stimulating</b> 54:22 <b>stint</b> 105:17 <b>stomach</b> 162:22 <b>stop</b> 88:2 100:22 153:10 182:23	252:3,4 276:14 <b>stopped</b> 97:17 <b>stopping</b> 210:19 <b>stories</b> 80:21 236:23 239:10,12 <b>story</b> 124:22 <b>straight</b> 51:10 232:18 <b>straightforward</b> 238:19 <b>strategies</b> 101:11 <b>street</b> 3:13 4:8 5:20 6:19 7:8 <b>strength</b> 74:15 <b>strengths</b> 136:18 <b>stress</b> 244:23 272:23 273:3,8 <b>stressful</b> 272:24 <b>strictly</b> 255:10 <b>strike</b> 214:19 <b>strikes</b> 240:17 <b>strong</b> 132:19 248:9 266:7 <b>student</b> 88:16 128:25 129:1 210:12,14 251:4 252:14 254:3 <b>students</b> 89:11,12 145:6 147:15 253:14 <b>studies</b> 75:4 96:7 96:11,13 129:25 130:16,18,18 133:16,18 177:14 177:15,21 189:17 189:23 190:6,8 242:19,23,24 244:21 268:1,12 271:6 <b>study</b> 32:5 97:3,5 98:10 129:24	135:14,17,18,19 135:21 136:17 146:7 160:21 162:6 175:11,16 177:10 190:11,14 190:15 191:3,3,8 191:11,15,15 200:13,23 242:15 270:17 285:12 <b>stutler</b> 1:12 2:13 6:4 13:3 286:24 <b>sub</b> 60:19 181:3,3 <b>subcommittee</b> 93:3 96:19,23 99:13,18,24 101:1 <b>subcommittees</b> 94:1,3 <b>subject</b> 17:3,4 30:20,20 34:23 85:17 95:14 113:5 160:4 161:12 163:22 <b>subjective</b> 107:14 <b>subjects</b> 280:17 <b>submission</b> 60:11 71:22 253:25 <b>submit</b> 42:1 50:13 66:9 67:23 72:1 253:12 <b>submitted</b> 31:4 37:17,22 39:15 40:20 42:12 47:23 47:24 48:8,18 49:1,17,24 50:10 54:7,8 55:10 61:19 63:17 64:15 64:19 65:24 67:7 68:15,24 70:21 71:10 164:15 193:18 198:16 213:15 251:3,9,17	253:25 254:1 <b>submitting</b> 65:7 <b>subparagraphs</b> 192:19 <b>subscribed</b> 289:14 <b>subsequent</b> 41:8 84:7,10 214:25 <b>subsequently</b> 38:12 69:6 <b>subspecialties</b> 83:20 <b>substance</b> 57:5 58:12 120:19 160:10 <b>substantiate</b> 189:25 <b>subtle</b> 215:3 <b>subtract</b> 72:18 <b>successful</b> 264:6 274:5 282:6 <b>sue</b> 38:25 <b>suffer</b> 244:25 <b>suffering</b> 79:22 108:22 110:4 172:20 239:16 244:19 <b>suggested</b> 225:5 <b>suggesting</b> 247:7 <b>suggestion</b> 61:17 <b>suggests</b> 46:22 <b>suicide</b> 36:5 109:21 139:19 140:6 183:1,12,17 183:22 184:1,22 186:25 187:11 190:17 192:1,14 260:23 <b>suite</b> 5:21 6:20 7:9 <b>summaries</b> 96:6 <b>summarize</b> 189:14 208:11 226:21
--	--	--	--

**[summarized - talked]**

<b>summarized</b> 169:23	209:7 246:13	<b>surgical</b> 30:24 192:24 234:18,19	55:17 70:5 75:5
<b>summarizing</b> 146:9 163:3	<b>supports</b> 173:22	246:24 284:2	76:25 105:16,21
170:15	<b>supposed</b> 263:16	285:13	139:8 141:14
<b>summary</b> 189:20	<b>supposition</b> 225:6	<b>surgically</b> 277:25	143:19 144:16
202:8 213:3	<b>sure</b> 17:16,20 21:1	<b>surprised</b> 119:12	148:21 172:6
<b>sunday</b> 58:14	43:13 44:9 46:15	127:17	191:17 207:7
128:21 129:3	53:6 66:13 70:13	<b>surreptitiously</b>	220:23,25 227:23
<b>superintendent</b>	76:17 77:22 84:23	141:14	227:23 229:6
1:12,14 2:13,14	94:14 104:12	<b>surrogates</b> 97:22	234:24 235:3
5:14 6:4 13:2,6	114:10 120:3	<b>surrounding</b>	254:19 264:13
286:20,24	122:7 125:18	57:13	277:25 280:23
<b>supervise</b> 273:22	134:20 140:25	<b>survey</b> 201:5,6	281:3 282:22
<b>supervising</b> 82:14	149:1 150:5 156:4	236:9	285:23
<b>supervisor</b> 257:20	170:19 174:4	<b>susan</b> 6:6 12:25	<b>taken</b> 2:21 11:10
257:20	176:1 179:17	48:21 286:22	157:23 182:24
<b>supplemental</b>	186:21,22 201:17	<b>susan.deniker</b>	289:3
61:14,22	208:6 214:16	6:11	<b>takes</b> 246:19
<b>supplementation</b>	216:4 228:6,6	<b>swaminathan</b> 4:5	<b>talented</b> 152:3
277:22	237:15 246:17	12:19,20	<b>talk</b> 56:15 78:4
<b>support</b> 8:12 46:9	267:6,16 277:17	<b>swear</b> 13:19	80:5 85:15 88:22
46:11,18 47:2,3,18	278:9 280:18	<b>sweden</b> 103:21	89:24 99:13 121:7
47:21,24,25 48:8	<b>surgeon</b> 177:11,13	190:23	121:15,22,22
48:14,16,18,24	208:21	<b>swedish</b> 190:11	122:16,18 124:4
49:1,11 50:7 64:8	<b>surgeries</b> 189:19	<b>symposium</b> 90:2	126:1 128:21
64:13,15 65:24	<b>surgery</b> 17:1 23:8	<b>system</b> 258:21	137:21 141:15
99:5 148:4 182:20	24:2,5 25:12 27:3	281:25	146:4 171:10
190:6,9 203:23,24	27:5,7,8,10,13	<b>systematic</b> 175:4,6	181:15,25 182:3
238:4 249:2,16	28:3,17,22 29:4,7	175:15,17,23,25	182:18 187:22
251:9,17 254:1	29:11,14,19 39:20	176:11,15 212:4	201:10 208:13
<b>supported</b> 138:1	49:6 109:18	<b>systems</b> 32:7	209:6 213:8,17
138:16,19 141:2,8	131:14,15,17	189:8	220:20 221:20,24
141:22 142:2	133:10,13,14	<b>t</b>	221:25 222:1,7,8
189:13 204:7	135:21 136:4,5	<b>t</b> 15:1,2,2 37:25	256:8 258:22
210:9 250:6	138:3 171:2	256:12	272:12
<b>supporter</b> 99:8	177:11,12 178:19	<b>tab</b> 258:8,9 260:12	<b>talked</b> 100:20
<b>supporting</b> 47:9,9	180:10 190:13,16	261:19 267:20	113:22,24 121:4,5
48:2 180:9 253:22	191:1,9,10,12,13	278:21	122:17 124:7,25
<b>supportive</b> 46:23	191:16 192:16	<b>take</b> 11:7 18:15,21	125:20,25 126:12
46:25 117:18	224:15 260:21	30:21 33:23 37:11	126:14,22 187:19
	271:19 272:6,8	44:6 51:5,10	214:23 271:23
	284:23 285:9		274:17

**[talking - thank]**

<b>talking</b> 27:24 77:9 85:5 86:4 92:12 99:25,25 100:17 108:13 114:25 127:8 139:3 146:25 147:11 156:8 166:14,15 179:22 180:6,13 180:16,17 181:21 182:1,7 196:8 208:2 209:23 210:4 211:22 215:1,2,3 216:4 220:4,8 234:12 235:1 236:9 238:16 283:20 <b>talks</b> 77:18 235:22 235:23 <b>tapped</b> 25:8 <b>taste</b> 139:21 <b>taught</b> 40:21 88:6 88:12 100:13 263:22 264:11 281:2 <b>tavistock</b> 168:8 <b>teach</b> 88:8,13,19 88:19 100:1 113:4 113:6,7 132:25 133:2,22,23 223:6 <b>teacher</b> 89:16 <b>teaching</b> 88:4,7 89:5,7 90:6 112:25 <b>team</b> 115:13 149:4 150:9 151:15,18 153:14 158:16 159:9 161:17 162:21 163:14,18 188:4 249:3,14 250:4 251:6,10,20 252:14	<b>teams</b> 150:19 156:24 157:14 158:8,13 <b>technical</b> 231:12 <b>teenage</b> 100:7 172:14 <b>teenager</b> 86:18 129:10 132:9 234:19 <b>teenagers</b> 118:23 122:7,8 170:22 173:14 209:5 <b>teens</b> 93:18 147:12 165:11 <b>tell</b> 16:20 38:21 48:4 50:22 56:1 56:12,23 68:11 74:10,19,23 82:12 89:19 109:10 113:12 115:1 123:4 124:22,22 132:4 139:10,10 140:8,8 163:21 207:2 223:6 224:16 249:11 251:15 254:5 260:4 273:17 274:7,8,24 <b>telling</b> 35:4 123:21 153:10 208:21,22 237:18 250:15,16 260:2 274:9,9 277:9 <b>temperamental</b> 198:24 199:11 <b>template</b> 72:5 <b>temporary</b> 275:7 <b>ten</b> 100:6 136:15 173:15 176:13 216:5 245:6	<b>tenable</b> 248:8 <b>tend</b> 158:1 167:2 245:10 <b>tends</b> 125:7 <b>term</b> 25:18 27:17 27:18,21 28:8 31:19 46:20 50:7 81:9,11 86:15 101:23 102:1,5,6 107:13 117:6,7 119:24 131:21 133:3,12 136:4 146:14 153:24,25 171:13,15,16,24 174:18 195:3 216:11 226:4,24 227:2 265:23 266:13 <b>terminology</b> 14:10 192:22 <b>terms</b> 19:9 23:20 31:19 56:18 66:25 67:21 80:7 85:25 86:8 104:10 117:4 148:17 209:24 <b>terrible</b> 125:8 180:4 <b>terribly</b> 229:22 <b>testi</b> 34:12 <b>testified</b> 13:24 22:23 23:2,15 24:1 26:18 28:17 28:25 30:5 33:17 35:12 52:23 82:2 137:2 157:10 169:20 181:11 184:17 192:11 206:24 219:13 250:13 268:14 <b>testify</b> 28:21,21,23 35:7 46:19 80:22	250:13 <b>testifying</b> 19:25 20:1,5 30:7,11,16 34:13,18,20 35:2 218:9 252:3 289:6 <b>testimonies</b> 40:25 <b>testimony</b> 15:21 20:8,13 22:13,17 24:4 30:10 31:3 32:9,25 33:4,12,20 33:22 34:7,12 35:11 36:1 37:1,4 37:8,11,19 39:4,13 39:14 40:10,12,21 40:23 41:3,6,9,13 41:23 42:6,7 43:4 43:7,8,15,16,22 44:22,23 45:1,4,8 45:9,11,13,22,25 46:1,2,7,8,9 47:16 47:23 48:5,7,18 49:1 50:10 54:6 57:17,19 60:15 68:19 102:8 106:21 167:21 170:23 171:1 175:14 186:23 218:5,8 219:12,25 220:17 232:1 251:8,13,23 252:12 253:12 254:8,14 268:14 287:12 288:8 <b>testing</b> 191:24 <b>testosterone</b> 56:25 <b>texas</b> 33:14 52:21 170:1 <b>text</b> 159:14 <b>textbook</b> 74:14 <b>thank</b> 13:18 14:16 15:5 16:16 17:15
---	---	--	--



**[thank - think]**

21:11 22:19 37:7 39:4 40:11 41:12 41:25 42:23 44:22 45:24 51:11 57:7 60:22 63:6 67:3 68:4 69:17 72:3 72:23 75:13,21 77:12 78:13 79:6 80:8 83:7 89:18 90:11 100:25 108:8,11 112:12 120:9 124:7 136:24 137:16 140:10 141:20 144:10 155:25 161:10 164:2 167:10,18 176:19 187:18 197:8 200:1 207:3,19,23 211:13,17 217:20 219:22 220:20 228:12 239:6 245:7 254:16,18 254:25 259:13 261:18 263:9 265:23 267:13,19 268:8,21 269:20 275:1 282:12 285:22 286:7,11 286:17,21 287:1,6 287:8,10,16 <b>thanks</b> 258:10 <b>theater</b> 148:13 <b>theirs</b> 134:4 <b>theoretical</b> 84:17 185:12,13 <b>theory</b> 181:9 244:24 <b>thera</b> 124:1 <b>therapeutic</b> 85:20	<b>therapeutics</b> 47:14 <b>therapist</b> 120:16 259:1 <b>therapy</b> 89:9 98:2 143:24 144:18 156:20 180:20 202:20 204:6 205:2,5 246:2 <b>thereof</b> 42:16 289:10 <b>thin</b> 271:18 <b>thing</b> 72:14 77:15 77:19 83:18 117:14 121:10 124:6 125:4,5,9 137:22 146:24 148:16 169:9 191:23 200:6 201:15 214:3 230:17 240:7 250:22 279:14 <b>things</b> 17:6 23:18 23:23 54:16 56:5 71:24,25 74:7,20 81:4 86:5 90:5 101:5,12 112:8 127:18 131:11,11 132:18 143:1 146:9 148:11 158:22 180:23 181:22 186:3 196:3 197:9 199:23 200:22 202:2,7 205:4 206:25 207:1 210:5 214:17 221:24 222:24 227:21 248:17 250:12,20 253:8 259:11,24,25 264:14 265:5	268:19 271:9,23 277:11 279:25 280:22 <b>think</b> 20:14 23:13 24:21 25:23 27:5 27:7,23 33:1 35:3 36:14,21,22 37:23 39:22 41:13 43:6 44:20 45:17,17 46:5,20,21 48:5 52:1,13,23 53:25 54:2,3,16,25 55:8 55:14,15 56:9 61:17 62:1,13 63:18 65:8 67:13 68:20,24 69:6 70:8 72:7,8,18 73:3,14,17,23 76:6 77:5,21 79:20 82:4 83:17 84:16 88:7 89:6 92:18 93:21 97:1 99:16 99:19 101:15 102:7,8,22 103:18 104:5,8,13 106:10 107:18,20,25 108:12 109:19 111:2 112:10 113:18 114:9,16 114:18,19 117:1 117:13,16,22,23 121:8 122:21 125:2 127:4,11 129:4,8 130:10 131:13 132:16 134:8,24 135:19 135:25 136:24 138:23 140:22,23 141:9,18 144:5 146:7,16,22 147:7 147:20,20 148:5,6	148:20 149:10,10 149:17,18,24 150:1,6 151:9 152:19,19 153:17 153:20,25 154:11 154:21 155:14,15 156:3 157:16,25 158:5,15,20,23 160:3,6,11 161:2,7 161:20,22 162:11 163:13,16 165:22 168:17 170:20 171:16 172:4,4 173:16,18 174:21 176:6,20 177:21 177:25 178:7,9 180:16,17 181:11 181:16,21 182:14 185:14 187:10,21 188:20 189:10 190:5 195:24 197:6,22 199:8,24 202:2,8,10,12 204:7 205:2 206:2 206:14,15,24 212:10 215:13 216:8,12,20 217:9 217:17 220:8,17 221:4 224:2,12,15 225:8,23,25 226:15,17,24 227:2,5,20 228:12 228:21 229:19,25 230:6,7,10 231:23 232:2,8 233:5,14 235:13 236:16 237:5 238:9 239:22 240:6 242:25 244:7 245:23 247:3,6 248:12 250:17,17
---	--	--	---

**[think - trans]**

250:19,23 252:21 253:4,6,16,17,17 254:17,19 255:18 256:16 260:20 262:6,12 263:4 264:1,1 266:1 267:4 269:23 270:13 272:9,24 272:24 273:18 274:22 275:18 276:16,17 279:1 279:14,23 280:1,2 280:25 282:8 284:12,13 285:24 <b>thinking</b> 71:17 154:5 157:24 174:18 193:20 250:18 277:4 <b>thinks</b> 248:6 270:12 <b>third</b> 24:12 90:21 139:18 152:4 156:18 <b>thorough</b> 15:25 105:6 116:17 125:17,18,23 <b>thoroughly</b> 204:11 <b>thought</b> 29:16 34:1 39:21 50:8 67:10 92:21 97:20 98:9,10 103:2 119:9,10 141:13 169:10 187:7,7 210:18 215:25 <b>thoughtful</b> 248:2 <b>thoughts</b> 180:2 233:8 256:3 <b>thousand</b> 74:17 <b>threatened</b> 82:17 <b>three</b> 49:21 54:2,3 90:2 91:8 112:9	113:1,7 180:7 185:13,16 192:6 198:6,11 215:4 216:13 217:4,12 226:21 264:18 265:14 273:7,14 <b>throwaway</b> 238:12 <b>thursday</b> 24:12 <b>time</b> 11:25 18:16 24:9,22 29:17,20 36:25 40:11,24,25 44:7 49:8 51:9 68:24 71:4,25 74:19,22 75:2 84:20 85:2,3,5,14 86:4,24 87:6,25 88:2 90:3 91:1,24 99:11 108:1 110:20 113:25 114:24 116:19 128:14 129:4 137:25 138:24 139:4 140:14 142:2 143:10,19 148:21 154:3 166:20 172:22 194:7 199:22 205:23 206:15 208:13 209:8 210:4 229:5 232:18 237:15 238:18 243:1 253:23 257:4 266:7 267:4 271:20 282:22 286:17 287:1,9,17 289:4 <b>times</b> 15:6 25:2,3 25:15,20 27:10,13 28:10,12 49:21	163:20 173:21 175:5 180:8 190:18 196:1 206:8 246:16 252:24 253:3,8 <b>tingley</b> 63:14 65:6 67:6 167:16 <b>tissue</b> 43:24 <b>title</b> 64:5 89:23 98:12 237:8 255:8 <b>titled</b> 60:3 <b>today</b> 13:15 19:9 20:1,5,10,13,16 34:12 58:8 60:15 60:16 75:25 76:12 76:13 102:1 135:9 146:22 148:3 167:14,15 174:19 174:25 200:2 216:8 246:16 260:9 268:15,18 268:20 275:19 285:8 <b>today's</b> 129:3 216:4 220:17 287:12 <b>told</b> 36:6,22 49:4 49:10 56:22 67:24 71:14 73:10 82:18 82:18,20,21 123:11,17,18,18 128:22 194:13 206:25 207:1 249:8 257:14 258:25 263:15,19 263:19 266:8 274:8 <b>tolerant</b> 240:4 <b>tom</b> 79:21 <b>tomorrow</b> 202:10	<b>top</b> 65:11 194:21 197:19 203:12 213:2 275:19 283:2 <b>topic</b> 60:19 88:23 279:22 <b>toro</b> 3:6 12:13,14 <b>toronto</b> 225:6 <b>total</b> 287:14 <b>totally</b> 101:5 158:14 214:17 <b>touch</b> 223:24 <b>touched</b> 21:12 <b>toughen</b> 162:22 <b>tour</b> 117:3 <b>track</b> 55:1 149:11 249:3,14 250:3 251:6 <b>tradition</b> 186:13 270:20 <b>traditions</b> 96:21 <b>traffic</b> 232:5,11 <b>train</b> 264:15 <b>trained</b> 79:17 80:23 <b>training</b> 79:12 80:9,11,17 81:1,3 81:5,10,13,15 83:8 83:13 84:6 113:15 <b>tran</b> 33:7 221:16 236:16 237:7 <b>trans</b> 24:25 25:13 26:17 30:25 31:11 32:6 34:2 38:6 41:10 42:17 43:9 43:20 56:21 60:4 60:4,8 82:13 100:8 110:23 118:19,19 122:6 129:10 142:11,12 142:15,15,16,17
---	---	---	---



[trans - true]

142:22 143:3 149:16 150:24 151:4,7,8 152:4 154:23 155:4 158:2 160:25 161:3,16 162:19 169:4 172:7 174:8 186:19 200:21 204:7 221:12 224:18 225:4,7,12 227:18 228:2,21 228:24 230:2 234:12 243:6,25 244:16,20 246:4 246:11,12,13,15 246:18,22 247:5,7 247:16,25 253:4 263:20 264:4 274:6 275:23 276:5,12 280:12 280:25 <b>transcribe</b> 19:1 <b>transcribed</b> 289:8 <b>transcript</b> 19:2 94:15,21 95:24 263:7 288:6 <b>transcription</b> 289:10 <b>transfer</b> 23:5,6 29:8,9,11,14,24 49:5 <b>transferred</b> 139:9 <b>transferring</b> 29:2 <b>transform</b> 228:23 228:25 <b>transformation</b> 234:19 <b>transgender</b> 8:20 15:15 16:3,4,6 19:16 42:8 43:3,9 43:17 44:25 45:14	46:3,10,11 48:8 49:2,18,25 50:11 90:4,15 93:17 100:3 101:25 126:5 143:9 146:1 149:4 150:10,18 150:21 151:18 153:14,16,18,19 154:17 157:13,15 158:10,16,18,21 159:8,21,25 160:11,15,15,22 161:12 163:19 169:3 170:4 189:18 191:6,13 191:18,25 192:15 195:11 198:8 203:24 205:11 206:6 211:9 221:21 222:9,11 222:12,14 223:11 223:15,17 224:7 226:9,16,17 227:5 227:10,12 228:12 230:8,11 232:25 232:25 234:1 235:21 237:8,21 237:25 240:18,18 240:22 241:5,8,8,9 241:10 243:4,8,9 243:15 244:18 245:10,11,16,22 246:25 248:19 249:3,13 251:22 253:14,23 254:3 254:10 263:16 265:18,24 266:14 276:4,10,15,18 277:1,18 278:18 281:3	<b>transgendered</b> 101:20 227:15 270:13 <b>transgenderism</b> 168:16 226:1,2 241:16 <b>transgenders</b> 227:14 <b>transition</b> 33:14 33:21 34:14 116:8 119:20 125:9 129:17 131:23 132:1,2 138:2 141:1,3,8,10,13,18 141:22,23 142:3 156:21 158:1 177:4 230:20,23 231:19 268:1,13 269:4 274:19 284:2 <b>transitioned</b> 34:17 34:19 128:23 181:18 230:18 241:12 <b>transitioning</b> 36:8 132:8,9 230:10 250:5 <b>transsexual</b> 225:15 236:9,10 236:16 248:24 <b>transsexuality</b> 234:17 <b>transsexuals</b> 236:13,17 <b>transvestism</b> 225:10 <b>trapped</b> 225:16 277:7 <b>trauma</b> 199:13 <b>treat</b> 194:24 222:10,13 263:16	<b>treated</b> 38:6,6 102:1 135:23 160:16 191:9 263:20 <b>treating</b> 35:6 221:3,5 235:20 <b>treatment</b> 24:6,6,7 24:11 25:10,24,25 26:19,21,24 33:25 36:2 60:8 101:21 101:23 102:3 103:13,14,16,19 104:1,6,9,13,19,25 105:4,5,10 121:1 123:6,13 128:1 130:22 131:4 133:4 134:15 169:4 175:8 210:9 211:4 226:2 269:25 270:1 284:19,20 <b>treatments</b> 101:19 102:5 136:9,12 279:6 <b>tree</b> 257:16 <b>trend</b> 148:14 176:9 <b>trends</b> 148:8,16 222:6 <b>trial</b> 24:8 30:3,6 33:17 37:8 <b>trick</b> 145:16 <b>tried</b> 124:20 201:19 229:13 242:18 <b>trouble</b> 74:22 <b>troubles</b> 262:6 <b>true</b> 22:13,16 74:21,22 166:2,5,9 167:14,15 214:20 214:20,20 217:9
--	---	--	---

[true - understood]

245:1,5 260:9 267:15 276:2 284:16 288:9 <b>trust</b> 216:22 250:15 263:21 264:15 269:24 <b>trustee</b> 117:20 <b>trusting</b> 132:5 <b>truth</b> 68:22 250:16 260:2,6 264:4 274:9 <b>truthful</b> 20:8,13 256:4 260:1 262:18 264:23 265:7,22 267:9 268:3 270:23 272:2 273:10 275:13 278:14 279:10 280:6 <b>truthfully</b> 20:5 <b>try</b> 18:7,10,15 19:7 21:22 27:22 123:2 175:20 177:23 178:22 195:23 212:23 240:3,5 257:4 277:25 <b>trying</b> 30:19 45:7 45:15 46:23 47:11 50:6 53:6 61:12 67:3,5 72:3 81:6 93:4 96:11 100:12 100:14 101:19 103:18,19 118:18 124:14 131:2,12 132:25 133:2 136:22 137:1,6,22 141:20,21 144:11 148:10 150:17 155:13,14 156:7 157:18 161:10,24	167:10,14 172:12 173:1 180:6 204:1 209:14 212:12 223:12 234:24 238:2 247:15 253:6 254:5 260:8 275:15 277:16 <b>tryon</b> 5:6 13:10,10 51:23 52:1,5 170:6 177:25 178:5 183:5,20 184:4 205:20,22 222:15 242:9 249:6 253:15 254:13 262:22,22 263:1,8 264:24 267:12 268:5,7 269:15,17,20 286:15,15 <b>tucson</b> 35:17 38:19 <b>turn</b> 75:16 78:13 91:11 108:12 137:16 143:15 176:4 207:20 235:10 <b>turned</b> 140:22 <b>turning</b> 63:25 65:9 87:20 196:6 <b>twelve</b> 136:14 <b>twice</b> 180:7 195:25 <b>two</b> 17:5,7 31:13 38:18 40:16 55:23 56:14 60:2 86:20 89:10 90:19 91:5 93:13 95:14 99:4 99:20 113:7 123:8 128:1 133:11,15 133:16 136:14 142:4 160:17 176:14 180:22	206:11 209:18,19 209:24 210:1,7,8 212:12 215:4 216:13 217:2 219:4 220:1 232:5 232:11 236:3 237:5 242:24 255:16 259:19 263:18 266:3 275:19,20 <b>ty</b> 18:15 <b>type</b> 119:1 <b>typically</b> 209:17 266:13 <b>u</b> <b>u.s.</b> 11:14 137:4 <b>uk</b> 103:21 120:24 125:2 135:18 242:23,24 <b>ultimate</b> 49:6 <b>ultimately</b> 33:1 267:17 <b>unable</b> 50:17 54:23 165:17 257:1 <b>unaware</b> 101:5 142:24 158:14 214:8 <b>unchangeable</b> 206:12 <b>unclear</b> 136:25 <b>uncomfortable</b> 252:23 253:1,3,7 <b>undergo</b> 131:23 <b>undergone</b> 133:15 <b>undersigned</b> 289:1 <b>understand</b> 17:24 18:4,13,18,19,22 19:3,14,19,23,25 31:19 34:10 40:24 42:3 46:23 47:16	47:22 48:19 50:7 52:2 53:7 54:20 60:22 61:12 62:3 64:14,17 66:25 67:3,5,20 69:3 84:8,9 93:4 115:12 117:6 124:14 133:7,8,9 145:5 150:14 161:24 165:24 167:11 187:3 190:3 192:9 203:11 208:16,17 209:15 223:12 224:22 229:2 234:15,17 240:19 241:1 248:21 249:19 250:11 253:10,16,19 266:23 276:19 277:17 279:2 <b>understanding</b> 20:24 21:1,2,3,4 30:16 32:12 39:12 45:11 47:1,2 48:24 52:9 58:5 65:22 71:24 73:11 73:12,14 80:20 81:10 84:14,17,19 94:6 98:8 105:1 109:17 115:9 116:12 118:25 119:19 124:15 173:24 206:17 213:24 216:9 240:5 260:21 284:7 285:11 <b>understood</b> 18:12 21:4 30:23 33:4 99:17 110:14 117:4 121:2,3
---	---	---	--

**[understood - virginia]**

172:7 187:7 <b>undertaken</b> 129:21 133:15 <b>uneasy</b> 280:4 <b>unfair</b> 155:6,6 <b>unfolded</b> 206:7 <b>unfortunate</b> 261:4 261:10 <b>unfortunately</b> 262:4 <b>unit</b> 11:9 <b>united</b> 1:1 2:1 103:24 104:15 120:7 124:12,16 125:3 135:16 177:19,19,22 <b>units</b> 287:14 <b>universe</b> 159:16 <b>university</b> 74:13 87:22,24 88:23 110:16 111:8,10 111:17,19,23 112:13,15,17,22 112:25 113:3,13 113:19 114:8 118:1,25 139:12 211:5 257:22 <b>unknown</b> 47:8 130:9 <b>unrealistic</b> 155:4,5 <b>unscientific</b> 226:22 <b>unstable</b> 82:15 <b>untreated</b> 191:7 <b>updated</b> 76:1 77:3 <b>updating</b> 77:14 <b>uphold</b> 251:18 <b>uploading</b> 256:7 <b>upset</b> 236:10 <b>url</b> 263:6	<b>use</b> 14:10,23 15:3 18:25 19:9 27:18 45:18 47:21 71:9 89:23 102:1,7 107:13 119:24 130:14 136:16 186:16 192:22 194:4,6 208:20 213:22 221:24 226:4 227:2 254:7 266:13 <b>usual</b> 135:24 176:8 210:2 266:19 <b>usually</b> 31:19 89:2 90:18,19 176:3	235:19 237:20 252:20,24 <b>vary</b> 283:7 <b>vast</b> 24:7 223:18 <b>vegan</b> 276:24 277:18 <b>vegans</b> 275:10,17 <b>vegetarians</b> 275:9 275:16 <b>vein</b> 194:19 <b>venue</b> 121:19 <b>verbal</b> 18:25 <b>veritext</b> 7:16 11:17 287:15 <b>veroff</b> 3:9 12:9,10 <b>version</b> 65:18,19 77:4 164:21 195:7 <b>versions</b> 196:4,4 <b>versus</b> 11:12 15:17 20:19 35:6 37:25 86:18 96:14 135:23 136:2 191:12 220:6,7 222:1 242:8 243:25 281:14 <b>video</b> 8:22,24 9:1 9:3,5,7,9,11,13,15 9:17,19,21,23,25 10:2,4 11:6 37:16 178:12 257:5,11 257:18 258:13 260:16 261:23 262:24 263:13 265:13 267:3,24 269:2,21 270:10 271:4 272:20 275:6 278:6,25 279:20 <b>videoconference</b> 3:1	<b>videographer</b> 7:18 11:3,18 13:18 51:13,16 108:3,6 155:20,23 178:3 207:12,14,16 254:20,23 256:24 257:2 286:2,5 287:10 <b>videotaped</b> 1:19 2:20 <b>view</b> 26:16,17 31:17,21,23 32:19 55:18 57:19 105:3 107:3 111:25 112:1 115:16 117:25 120:6 124:1 130:21 138:20 149:3 154:13 159:20,24 160:5 161:11,12 162:19 163:1,12 173:3 182:10,11 182:12 216:10 255:9 276:13 281:19 <b>viewed</b> 148:17 <b>viewpoint</b> 246:19 <b>views</b> 54:18 95:21 118:4 232:23 233:1 254:8 <b>violate</b> 36:11,19 36:21 <b>virginia</b> 1:2,9,10 1:14 2:2,9,11,15 5:4,5,9,14,20,22 6:9,14,19,21 7:3,8 7:10 11:13,15 13:5,8,11,12 20:22 250:4 286:16,20 287:4
	<b>v</b> 15:2 <b>vague</b> 37:12 40:13 41:15 55:13 85:12 86:15 119:22 120:3 141:25 151:20 153:3 192:3 206:19 <b>valeria</b> 3:6 12:14 <b>validating</b> 235:20 <b>valued</b> 99:16 107:1,3,4,16 238:6 238:7 <b>values</b> 240:13 <b>varies</b> 128:13 <b>variety</b> 162:6,16 <b>various</b> 30:24 32:14 41:1,9,10 54:17 72:12 96:7 100:20 118:6,16 125:2 126:20 148:1,9 157:25 161:13 168:20 199:17 200:21 210:5 214:21,22		

**[virtual - witness]**

<b>virtual</b> 245:12	202:3 203:13	232:5,11 234:3	<b>wheelhouse</b> 147:9
<b>virtually</b> 91:4	205:8 208:5	237:24 255:23	<b>whereof</b> 289:14
113:6 126:22	209:25 210:16	276:6 277:2,19	<b>white</b> 6:8
<b>visibly</b> 126:22	217:13,13 219:19	<b>ways</b> 89:15 100:20	<b>wide</b> 159:22 160:1
<b>visit</b> 210:13	219:20 220:23	160:9 232:10	195:3
<b>visualizing</b> 196:17	235:5 236:11,13	235:3 252:20	<b>widely</b> 283:7
<b>vita</b> 75:20	237:11,16 261:15	<b>we've</b> 24:23 148:8	<b>wider</b> 256:10
<b>vitae</b> 60:2	268:7 270:11	187:19 205:3	<b>widespread</b> 137:3
<b>vocabulary</b>	271:11,11 277:12	<b>web</b> 263:6	<b>wilkinson</b> 4:18
194:10,11	277:13 281:6,15	<b>wednesday</b> 1:20	13:17
<b>vocation</b> 250:21	281:20,24 283:14	2:23 11:1 129:3	<b>willing</b> 120:17
<b>volume</b> 1:20 2:21	<b>wanted</b> 33:14	<b>week</b> 37:23 77:5	209:6 243:17
8:4 288:16	56:15,19 63:19	89:11 166:14	249:15
<b>volumes</b> 57:1	82:13 98:17 99:5	196:25	<b>window</b> 214:16
<b>vote</b> 250:21	101:11,12 122:14	<b>weeks</b> 91:8 99:21	217:6
<b>vpeletdeltoro</b> 3:18	137:23 139:4	210:4 273:7,14	<b>windows</b> 214:15
<b>vs</b> 1:8 2:8	154:23 158:24	<b>weighted</b> 134:5,6	<b>wisdom</b> 132:19
<b>vulnerable</b> 160:23	169:9 172:5	<b>weighty</b> 116:20,20	267:5 280:1
160:24	187:20 229:15	117:2	<b>wise</b> 117:14
<b>w</b>	235:18 257:24	<b>welcome</b> 108:10	141:13
<b>w</b> 1:11 2:11	258:19 265:17	156:2 175:11	<b>wish</b> 21:6 253:23
<b>wait</b> 142:17	<b>wants</b> 142:23	286:10 287:2,7	<b>wishes</b> 30:5 38:18
<b>waiting</b> 181:3	149:11 159:4	<b>welfare</b> 38:25	<b>withdrawn</b> 200:18
202:15 212:2	183:8 249:4	132:15	<b>witness</b> 8:2 13:20
<b>walk</b> 202:14 273:5	270:12	<b>went</b> 14:7 74:12	27:16 34:2,4
273:5	<b>washington</b> 64:20	82:20 139:8	35:22 36:10,20
<b>walked</b> 273:13	65:23 66:5 164:16	156:13 256:7	40:14 41:16 46:17
<b>wall</b> 4:8	<b>waste</b> 36:24	284:21	48:11 49:4,20
<b>want</b> 17:16 19:8	<b>wasting</b> 237:14	<b>west</b> 1:2,9,10,14	50:2,15,17 51:6,20
21:13 32:16 33:12	<b>watchful</b> 181:2	2:2,9,10,15 5:4,5,9	54:11 55:14 57:7
34:17 36:11,18,24	202:15 212:2	5:14,22 6:9,14,21	57:12,14,16,22
43:12 45:10 46:18	<b>water</b> 34:4	7:3,10 11:13,15	59:1,5,21 60:1
47:4 48:22 51:5	<b>wave</b> 104:2	13:5,8,11,12 20:22	62:1 65:3 66:2,18
52:15 61:4 74:19	<b>way</b> 17:15 28:7	250:4 286:16,20	67:10,18 68:8,18
95:6 98:19 108:12	35:6 48:12 54:17	287:4	70:11,15 76:9,11
108:15 119:17,18	60:23 94:13	<b>western</b> 1:2 2:2	76:19 81:8 84:1
125:16 126:4	136:11 144:1	87:21,24 88:5,21	85:13 86:17 91:16
143:3 173:21	155:13 163:3	110:15,21	94:13,14 102:16
177:4 179:24	181:17 185:11,24	<b>whatsoever</b> 114:2	102:18,20 106:15
181:13,15 182:18	199:8 216:5	173:13	106:18 109:6,8
186:19 196:12	220:18 228:7		111:14 119:4,6

**[witness - year]**

128:4 134:11 144:7 145:13 146:4 150:13 151:21 153:7 154:21 158:20 159:13 161:20 162:25 165:21 168:15 169:17 170:7 171:5 180:25 183:6,21 184:12 187:2 192:4 195:16 196:24 199:20 200:20 205:24 213:21 219:14,19 219:23 221:23 222:16 224:10 226:12,20 227:8 229:21 230:25 231:14 232:2 234:5 238:15,22 239:9 240:25 241:7,25 242:10 243:12 246:21 247:9,12,20 249:8 249:24 250:9 251:13 252:1,11 252:16 253:11,16 254:16 256:23 257:9 259:10 267:15 268:6 283:18 285:2 286:10,14 287:2,7 289:14 <b>witness's</b> 61:5 232:1 250:8 254:15 <b>witnesses</b> 289:5 <b>wolf</b> 168:14,14 <b>woman</b> 16:7 24:25 26:17 122:5 225:3	229:13 <b>women</b> 25:13 30:1 143:3,4 148:9 204:21 232:3,9,12 233:7 259:19 <b>women's</b> 145:9 147:17 <b>wonder</b> 153:20 <b>wondered</b> 57:16 191:14 <b>wondering</b> 172:1 201:13 265:24 <b>wonders</b> 191:22 <b>word</b> 19:16 45:1 46:17 47:1,3,21 64:13 92:15,16 103:10 157:17,24 161:9 214:7,19 215:25 225:2,23 265:15,15 <b>words</b> 25:13 127:12 162:25 193:6,22 230:15 261:8 283:21 <b>work</b> 24:4 26:3 28:6 44:21 52:19 59:12 68:22 72:5 83:6 87:24 88:15 89:8 93:12 94:2,6 94:7 95:8,9,11,13 96:2,5,15 99:23 101:6 105:24 110:22 114:4 138:5 175:4 199:14,16 211:14 232:2 240:4,6,11 242:12 280:17 285:3 <b>worked</b> 52:11,25 53:19 245:6 266:21	<b>working</b> 52:13 84:14 88:2 116:14 256:25 257:24 282:1 <b>works</b> 50:21 51:11 96:19 <b>workshop</b> 40:22 88:15 <b>workshops</b> 88:13 <b>world</b> 73:18 131:3 131:13 133:1,2 166:5 182:6 230:2 254:9 <b>worry</b> 231:6 <b>wow</b> 190:23 <b>wpath</b> 39:23 182:6 284:8,10,12,23 285:10 <b>wpath's</b> 284:3 <b>wrap</b> 98:15 <b>write</b> 53:1 99:12 138:21 139:7 140:19 179:3,3,4 208:20 210:23 261:14 266:5 <b>writer</b> 196:2 <b>writing</b> 60:11,17 103:3 174:13 <b>writings</b> 43:19 <b>written</b> 37:14 39:18 43:18 45:8 45:9 46:1,8 48:7 88:10 114:16 174:13 211:9 263:7 <b>wrong</b> 37:5 74:5 151:13 201:15 216:24 264:2 279:12 <b>wrote</b> 55:21 62:3 109:9,20 121:8	138:25 139:5 140:23 167:16 189:9 225:16 260:19,22 261:2 <b>wvago.gov</b> 5:11 <b>wyant</b> 5:17 <b>x</b> <b>x</b> 222:9 <b>y</b> <b>y</b> 23:5 222:9 <b>yeah</b> 53:16 61:6 62:17 63:14 71:3 76:22 77:25 78:16 82:4 86:20 102:16 109:13 136:21 141:20 142:11 161:10 164:11 167:10 190:4 194:4 200:15,16 202:22 206:14 211:24 218:19 227:23,24 228:15 235:12,18 237:12 238:17 246:21 255:24 259:13 262:3 271:17 278:8 <b>year</b> 15:9 17:13 23:8,11 24:13 37:24 77:23 78:2 84:22,22 88:22 89:12 99:4,21 101:19 112:9 121:8 132:1,2,3 133:16 134:2,3,3,4 139:2 140:3,12 147:3,3,4,4 149:11 150:7 151:17 166:14,15 174:8 179:10,11 186:14
--	---	--	--

**[year - zucker]**

190:13 210:11	<b>young</b> 21:7 52:20
220:4,6,7,7,11,12	52:20 54:5 60:9
220:13,16,16	74:11 80:23 83:17
234:22,22 235:7	83:17 139:1 173:4
249:2,13 250:3,14	174:3 199:14
250:24,24,24	223:13 228:9
258:18 259:15	<b>younger</b> 34:8,15
260:25 262:16	35:13 43:23 44:11
264:21 265:21	45:12 52:20 53:1
267:10 268:4	53:12,20,24 54:4,8
270:4 280:7	55:11,20,24 56:11
<b>year's</b> 90:1	98:17 168:3,12,25
<b>years</b> 17:5,7 23:23	169:6,8,13 173:14
28:16 31:12 56:4	<b>youth</b> 60:4 90:4
56:6 63:17 75:8	146:1 149:4
88:11 89:22 91:5	161:12,16 165:3
99:4 100:6 101:21	172:7 232:24
103:1 129:15	233:1
133:16 135:18	<b>z</b>
136:14,15,15	<b>z</b> 106:19 222:9,9
142:4 153:19,21	<b>zane</b> 106:19
165:4 172:14,16	<b>zeal</b> 263:23
172:16,16 173:6,9	<b>zebra</b> 180:22
173:16,16,17	<b>zebras</b> 180:18
174:1,5,6,10,12,25	<b>zelkind</b> 4:6 12:21
175:2 176:12,13	<b>zholstrom</b> 3:22
176:13,20 179:8	<b>zimmerman</b>
180:3 188:19	218:20 219:7
214:23 215:4	220:19
216:5,13 217:2,12	<b>zoe</b> 3:11 12:17
217:12 228:21	<b>zoom</b> 3:1 96:16
229:11,11,12	144:4
236:24 237:5	<b>zucker</b> 90:10,20
239:10 244:9	
245:6 258:14,23	
263:18 265:14	
270:20,21 281:11	
<b>yesterday</b> 58:15	
58:16,19 59:7,19	
<b>york</b> 4:10,10	
188:3	

Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.



VERITEXT LEGAL SOLUTIONS  
COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted fashion to authenticated parties who are permitted to access the material. Our data is hosted in a Tier 4 SSAE 16 certified facility.

Veritext Legal Solutions complies with all federal and State regulations with respect to the provision of court reporting services, and maintains its neutrality and independence regardless of relationship or the financial outcome of any litigation. Veritext requires adherence to the foregoing professional and ethical standards from all of its subcontractors in their independent contractor agreements.

Inquiries about Veritext Legal Solutions' confidentiality and security policies and practices should be directed to Veritext's Client Services Associates indicated on the cover of this document or at [www.veritext.com](http://www.veritext.com).



## Special Programs

### **PROGRAM FOR PROFESSIONALS**

DELR offers a comprehensive evaluation for individuals accused of crossing sexual and other ethical boundaries in their professional lives. This evaluation is often requested or mandated by various licensing boards, employers, or other groups to whom a professional may belong, as a condition of their remaining in their chosen vocation. The evaluation process includes multiple interviews and psychological testing focusing on the nature of the boundary crossing, the psychological/emotional issues underlying the misconduct, and the professional's ability to competently and safely continue in their chosen profession. The result of the evaluation is documented in a written report and is submitted to the requesting agency. Recommendations for further training, supervision, mentoring, or personal therapy, and any restrictions or limitations in ongoing practice are included in the report.

### **GENDER DIVERSITY PROGRAM**

Attitudes have changed dramatically towards the desire to live one's life in a new gender presentation, but for many individuals this crucial decision is not an easy one before, during, or after transition. DELR staff has been providing care for transgender children, adolescents, and adults for over forty years. Care involves thorough psychiatric evaluation, psychotherapy, and support for parents, their children, adolescents, and adults and their spouses. We are committed to ongoing support for those contemplating transition, undergoing it, coping with new life challenges, and for those considering de-transitioning. We maintain a collaborative relationship with a network of competent endocrinologists and surgeons for those undertaking hormonal and surgical assistance. Because every person's life circumstance is unique, decision for referrals to these professionals are made on a case by case basis following a process of getting to know our patients well and partnering with them to make the decision that best fits their life circumstances.

### **PROBLEMATIC SEXUAL BEHAVIORS PROGRAM**

DELR staff has a longstanding expertise in the evaluation and treatment of problematic sexual behaviors including sexual addictions and compulsions, infidelity, and unconventional sexual preferences. The program offers the individual a safe and non-

judgmental place to explore these highly sensitive issues. Treatment options include individual, marital, and group therapy, medication management, and coordination with local 12-step recovery programs for sexual addiction.

Type to search



## Registration Forms

Authorization for Release of Information (<http://www.delrllc.com/home/wp-content/uploads/2017/06/AUTHORIZATION-FOR-RELEASE-OF-INFORMATION.pdf>)

---

Consent for Mental Health Treatment of a Minor  
(<http://www.delrllc.com/home/wp-content/uploads/2017/06/CONSENT-FOR-MENTAL-HEALTH-TREATMENT-OF-A-MINOR.pdf>)

---

Consent for Purposes of Treatment (<http://www.delrllc.com/home/wp-content/uploads/2017/06/CONSENT-FOR-PURPOSES-OF-TREATMENT.pdf>)

---

Credit Card on File Agreement (<http://www.delrllc.com/home/wp-content/uploads/2017/06/CREDIT-CARD-ON-FILE-AGREEMENT.pdf>)

---

HIPAA Notice of Privacy Practices (<http://www.delrllc.com/home/wp-content/uploads/2017/06/HIPPA-NOTICE-OF-PRIVACY-PRACTICES.pdf>)

---

Patient Registration Form (<http://www.delrllc.com/home/wp-content/uploads/2020/12/PATIENT-REGISTRATION-FORM.pdf>)

---

Practice Policies and Information (<http://www.delrllc.com/home/wp-content/uploads/2017/06/PRACTICE-POLICES-AND-INFORMATION.pdf>)

---

23425 Commerce Park Rd. Suite 104  
Beachwood, Ohio 44122

**216-831-2900**

info@delrllc.com

Registration/Resources (<http://www.delrllc.com/home/registration-forms/>)

Type to search	
----------------	---

Proudly powered by WordPress (<https://wordpress.org>) | Theme: Shopbiz Lite (<https://themeansar.com>) by Themeansar

 ()  ()  ()  ()



**Exhibit**  
**SL 05**

Deposition of:  
**Stephen B. Levine , MD**  
*September 10, 2021*

In the Matter of:  
**Kadel, et al vs. Folwell**

**Veritext Legal Solutions**  
800-734-5292 | [calendar-dmv@veritext.com](mailto:calendar-dmv@veritext.com) |

IN THE UNITED STATES DISTRICT COURT  
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

~~~~~

MAXWELL KADEL, et al.,

Plaintiffs,

vs. Case No. 1:19-cv-272-LCB-LPA

DALE FOLWELL, in his official  
capacity as State Treasurer of  
North Carolina, et al.,

Defendants.

~~~~~

Video Deposition of  
STEPHEN B. LEVINE, M.D.

September 10, 2021  
9:05 a.m.

Taken at:  
Veritext Legal Solutions  
1100 Superior Avenue  
Cleveland, Ohio

Tracy Morse, RPR

1 APPEARANCES:

2 On behalf of the Plaintiff:

3 Lambda Legal, by  
4 CARL S. CHARLES, ESQ.  
5 120 Wall Street, 19th Floor  
6 New York, New York 10005-3919  
7 ccharles@lambdalegal.org

8 TARA BORELLI, ESQ.  
9 730 Peachtree Street, N.E.  
10 Suite 640  
11 Atlanta, Georgia 30308-1210  
12 tborelli@lambdalegal.org

13 and

14 McDermott Will & Emery, by  
15 MICHAEL M. WEAVER, ESQ.  
16 444 West Lake Street, Suite 4000  
17 Chicago, Illinois 60606-0029  
18 mweaver@mwe.com

19 On behalf of the Defendants Dale Folwell,  
20 Dee Jones, and the NC State Health Plan  
21 For Teachers and State Employees:

22 Law Office of John Knepper, LLC, by  
23 JOHN KNEPPER, ESQ.  
24 1720 Carey Avenue, Suite 590  
25 Cheyenne, Wyoming 82001  
john@knepperllc.com

On behalf of the Defendant State of North  
Carolina Department of Public Safety:

North Carolina Dpt. Of Justice, by  
ALAN MCINNES, ESQ.  
114 W. Edenton Street  
Raleigh, North Carolina 27603  
amcinnes@ncdoj.gov

~ ~ ~ ~ ~

24 ALSO PRESENT:

25 Joseph Vandetta, Videographer

TRANSCRIPT INDEX

APPEARANCES.....	2
INDEX OF EXHIBITS.....	4
EXAMINATION OF STEPHEN B. LEVINE, M.D.	
By MR. CHARLES.....	7
By MR. KNEPPER.....	227
By MR. CHARLES.....	244
REPORTER'S CERTIFICATE.....	249
EXHIBIT CUSTODY	
EXHIBITS RETAINED BY COURT REPORTER, 1-21	
(No Exhibit 16)	

1		INDEX OF EXHIBITS	
2	NUMBER	DESCRIPTION	MARKED
3	Exhibit 1	4/28/2021 Declaration....	14
4		of Stephen B. Levine,	
5	Exhibit 2	12/21/2020 Zoom.....	56
6		Deposition of Stephen	
7		Levine, M.D.	
8	Exhibit 3	Typewritten Three-Page...	62
9		Document Entitled,	
10		"Special Programs,"	
11	Exhibit 4	1/1/2019-12/31/2019.....	78
12		North Carolina State	
13		Health Plan Benefits	
14		Booklet, Bates Numbers	
15		PLAN DEF0001785-0001900	
16	Exhibit 5	Lesbian Gay Bisexual.....	89
17		Transgender Center	
18		Document Entitled,	
19		"Transgender Resources"	
20	Exhibit 6	4/8/19 Soneeya v. Turco..	104
21		Trial Transcript, Day 1	
22	Exhibit 7	"Correction: Parent.....	116
23		Reports of adolescents	
24		And young adults	
25		Perceived to show signs	
		Of a rapid onset of	
		Gender dysphoria,"	
		Article	
	Exhibit 8	"Transgender Teens: Is...	122
		The Tide Starting To	
		Turn?" Article	
	Exhibit 9	"Finland Issues Strict...	139
		Guidelines for Treating	
		Gender Dysphoria,"	
		Article	
	Exhibit 10	"Recommendation of the...	140
		Council for Choices in	
		Health Care in Finland	
		(PALKO/COHERE Finland),"	
		Article	
	Exhibit 11	"Stod och utredning vid...	145
		konsinkongruens hos barn	
		Och ungdomar," Article	



1	INDEX OF EXHIBITS (Continued)		
2	NUMBER	DESCRIPTION	MARKED
3	Exhibit 12	"Long-Term Follow-Up of..154	
4		Transsexual Persons	
5		Undergoing Sex	
6		Reassignment Surgery:	
7		Cohort Study in Sweden,"	
8		Article	
9	Exhibit 13	2017 "On Gender.....156	
10		Dysphoria," Booklet	
11		From Department of	
12		Clinical Neuroscience,	
13		Karolinska Institutet	
14	Exhibit 14	"Long-Term Follow-Up of..161	
15		Individuals Undergoing	
16		Sex-Reassignment Surgery:	
17		Somatic Morbidity and	
18		Cause of Death," Article	
19	Exhibit 15	5/15/2017 Telephonic.....170	
20		Deposition of Stephen	
21		Levine, M.D.	
22	Exhibit 17	"A Typology of Gender....196	
23		Detransition and Its	
24		Implications for	
25		Healthcare Providers,"	
		Article	
	Exhibit 18	DSM-5: Frequently Asked..202	
		Questions	
	Exhibit 19	"Endocrine Treatment of..213	
		Gender-Dysphoric/Gender	
		Incongruent Persons:	
		An Endocrine Society	
		Clinical Practice	
		Guideline," Article	
	Exhibit 20	"Pediatric Obesity.....217	
		Assessment, Treatment,	
		And Prevention: An	
		Endocrine Society	
		Clinical Practice	
		Guideline," Article	
	Exhibit 21	"Practice Parameter on...223	
		Gay, Lesbian, or Bisexual	
		Sexual Orientation,	
		Gender Nonconformity,	
		and Gender Discordance	
		In Children and	
		Adolescents," Article	

1 VIDEOGRAPHER: We are now on the  
2 record. The date is Friday, September 10,  
3 2021. The time is 9:05 a.m. The caption of  
4 this case is Maxwell Kadel, et al. versus Dale  
5 Folwell, et al. The name of the witness is  
6 Stephen Levine, MD. At this time the attorneys  
7 present and those attending remotely will  
8 identify themselves for the record.

9 MR. KNEPPER: John Knepper. I am  
10 an attorney representing Dale Folwell, et al.  
11 and I am defending the deposition of  
12 Dr. Levine.

13 MR. CHARLES: I am Carl Charles  
14 with Lambda Legal for plaintiffs, Max Kadel, et  
15 al.

16 MR. McINNES: On the phone is Alan  
17 McInnes, M-c-I-n-n-e-s, representing North  
18 Carolina Department of Public Safety.

19 MS. BORELLI: This is Tara Borelli  
20 with Lambda Legal on behalf of all plaintiffs.

21 MR. WEAVER: Michael Weaver with  
22 McDermott Will & Emery on behalf of all  
23 plaintiffs.

24 VIDEOGRAPHER: Will the court  
25 reporter please swear in the witness.

1           STEPHEN B. LEVINE, M.D., of lawful age,  
2           called for examination, as provided by the  
3           Federal Rules of Civil Procedure, being by me  
4           first duly sworn, as hereinafter certified,  
5           deposed and said as follows:

6           EXAMINATION OF STEPHEN B. LEVINE, M.D.  
7           BY MR. CHARLES:

8           Q.     All right. Good morning,  
9           Dr. Levine. My name is Carl Charles and I'm  
10          counsel for the plaintiffs. So I want to go  
11          over some ground rules first today. I know  
12          you've been deposed many times, but I'll go  
13          through some of the key ones and then we can  
14          move on. First, you understand you're under  
15          oath today?

16          A.     I do.

17          Q.     Okay. And of course that requires  
18          you to testify truthfully, correct?

19          A.     Correct.

20          Q.     Okay. As an estimate, Dr. Levine,  
21          how many times have you sat for deposition? An  
22          estimate is perfectly acceptable.

23          A.     An estimate?

24          Q.     Yes, sir.

25          A.     Six or seven.

1           Q.     Okay. Do you have a rough memory  
2 of the cases that you sat for deposition in?

3           A.     I didn't review them. I guess so,  
4 yes, I have a rough memory.

5           Q.     Okay. Can you list for me the ones  
6 that you remember being deposed in?

7           A.     Shall I -- just deposition as  
8 opposed to court testimony?

9           Q.     Correct, yes, please.

10          A.     There's a case called -- a Soneeya  
11 case in Massachusetts I've been deposed on. I  
12 think that was on two separate depositions.  
13 I've been deposed in a Florida case.

14          Q.     Was that case maybe Claire versus  
15 Florida Department of Management Services?

16          A.     Could you speak up, please? I'm  
17 hard of hearing.

18          Q.     Yes. Was that Claire versus  
19 Florida Department of Management Services, the  
20 Florida case you mentioned?

21          A.     It probably was. I generally don't  
22 remember the names of the cases --

23          Q.     No worries. We can move on.

24          A.     -- I remember the states that I've  
25 been in.

1 Q. No problem.

2 A. I've -- I'm sure there have been  
3 more. Most of my work has not -- I think has  
4 been writing expert opinions as opposed to  
5 being deposed --

6 Q. I understand.

7 A. -- so it's a little confusing for  
8 me.

9 Q. We can move on. So since Tracy,  
10 the court reporter, needs to transcribe  
11 everything, I'll just ask that your responses  
12 are verbalized instead of head nods or another  
13 kind of assent or opposition. Does that make  
14 sense?

15 A. Yes. You'll probably have to  
16 remind me again.

17 Q. I will. No problem. No problem.  
18 Please do wait to respond to my questions until  
19 after I finish them. And on a similar note, I  
20 will wait to start a new question until you  
21 finished your response. Okay?

22 A. Okay.

23 Q. All right. If you need a break,  
24 please say so, but I will request that we  
25 finish the question that's on the table before

1 we break. Mr. Knepper has informed us that you  
2 have a call at noon today. So we will take a  
3 break at 11:45. We will make that our lunch  
4 break so that you can take that call.

5 A. Thank you.

6 Q. Okay. If I ask a question that is  
7 not clear or that you don't understand, let me  
8 know and I will repeat it. I will restate it.  
9 Okay?

10 A. (Nodding.)

11 Q. And finally --

12 A. Okay.

13 Q. Is there anything today that would  
14 prevent you from giving full and complete and  
15 truthful testimony?

16 A. Not that I can think of.

17 Q. Okay. No medication or anything of  
18 that nature?

19 A. Oh, I take medication, but I don't  
20 think it's going to interfere with my verbal  
21 responses.

22 Q. Perfect. So before we get too far  
23 down the road today, Dr. Levine, I just want to  
24 note for you that we are going to talk quite a  
25 bit today about health care commonly used to

1        treat gender dysphoria. And so I wanted to  
2        note for you that if I refer to that care as,  
3        "Gender affirming," or perhaps, "Gender  
4        confirming," will you know that I am referring  
5        to medical care provided to transgender people  
6        to treat gender dysphoria?

7            A.        By, "Medical care," do you include  
8        psychiatric care?

9            Q.        I may, yes, that may be included.  
10       So you'll understand my use of that term  
11       today --

12           MR. KNEPPER: Objection, form.

13           Q.        -- not that you necessarily agree  
14       to the use of that term, but you'll understand  
15       what I'm referring to?

16           A.        Yes.

17           Q.        Okay. And similarly, if I use the  
18       phrase, "Gender affirming surgery," in this  
19       deposition, you will know that I am referring  
20       to what some people called or continue to call,  
21       "Sex reassignment surgery"?

22           A.        Yes.

23           MR. KNEPPER: Objection, form.

24           Q.        Have you been retained as an expert  
25       witness by defendants in this case?

1           A.       Yes.

2           Q.       Okay. And what expert opinions  
3 were you specifically requested to provide in  
4 this case?

5           A.       I don't have a succinct list of  
6 those opinions. I was asked to represent the  
7 state of science in the field.

8           Q.       And what would the field be that  
9 you're referring to, Dr. Levine?

10          A.       The treatment of people with  
11 transgender identities --

12          Q.       Okay.

13          A.       -- and the medical treatment,  
14 including the psychiatric treatment, of those  
15 individuals.

16          Q.       Thank you. Were you asked to also  
17 provide a discussion of different views among  
18 mental health professionals as to the  
19 appropriate treatment of gender dysphoria?

20          A.       Not specifically.

21          Q.       Okay. Thank you. And what did you  
22 do to prepare for this deposition today?

23          A.       I met with my attorney last  
24 evening, Mr. Knepper. And of course I've been  
25 working in this field for 48 years. And so I



1 can't begin to answer that question, other than  
2 everything I've read, all of my clinical work,  
3 the papers I've written and the preparation of  
4 this particular document that I provided.

5 Q. Were there any specific articles or  
6 reports that you reviewed within the recent  
7 past? I understand certainly your prestigious  
8 career would prepare you, but specifically  
9 related to this deposition.

10 A. Well, two nights ago, I re-read the  
11 critiques of the -- the published critiques of  
12 the Branstrom-Pachankis report. I re-read the  
13 critiques of Turban's -- 22 of Turban's papers,  
14 but in the run-up for -- in the preparation, I  
15 would say, in the five months preparation for  
16 this morning, I'm sure I reviewed at least 75  
17 papers.

18 Q. Okay. I will not ask you to relay  
19 those 75 papers.

20 A. Thank you.

21 Q. Did you, by any chance, review any  
22 association positions?

23 A. "Association positions?"

24 Q. Yes.

25 A. Well, I'm aware of WPATH and I

1 recently reviewed the paper by Dahlen, et al.  
2 in BMJ open, which reviewed WPATH's -- the  
3 quality of the WPATH standards.

4 Q. Could you say -- the lead author on  
5 that was Dahl. Could you spell that?

6 A. No. D-a-h-l-e-n.

7 Q. Oh, okay.

8 A. Dahlen, Conley, someone else and --

9 Q. That's fine.

10 A. Yeah.

11 Q. And you said that was with, "BMJ  
12 open."

13 A. April.

14 Q. Okay. Thank you. Did you speak  
15 with anyone, besides Mr. Knepper, in  
16 preparation for this deposition?

17 A. Mr. Knepper and his staff.

18 - - - - -

19 (Thereupon, Deposition Exhibit 1,  
20 4/28/2021 Declaration of Stephen B.  
21 Levine, M.D. With Attachment, was  
22 marked for purposes of  
23 identification.)

24 - - - - -

25 Q. Okay. Okay. So I'd like to mark

1 the first exhibit. So I'm marking for the  
2 record Exhibit 1, which is Dr. Stephen Levine's  
3 expert declaration in this case. Have you seen  
4 this document before, Dr. Levine?

5 A. Yes.

6 Q. Okay. Is this the expert  
7 declaration that you wrote in this case?  
8 Please take as much time as you need to look at  
9 it.

10 A. Well, I would assume it is.

11 Q. Okay. And did anyone, besides  
12 yourself, contribute to the writing of this  
13 report?

14 MR. KNEPPER: Objection to the  
15 extent that it inquires into --

16 MR. CHARLES: Yes, excluding  
17 attorney privilege.

18 MR. KNEPPER: -- excluding  
19 Mr. Knepper and his staff.

20 MR. CHARLES: Correct.

21 A. No.

22 Q. Okay. Dr. Levine, will you turn in  
23 that report, please, for me to page 11. And  
24 the pages, I believe are back to back, so it  
25 may be on the backside of one page.

1           And on page 11, if you'll look at  
2           paragraph n. It's about halfway down that  
3           page. Do you see that?

4           A.     Paragraph what?

5           Q.     Paragraph n. as in Nancy.

6           A.     Oh, that's an, "n"?

7           Q.     Yes. It's a lower case, I believe.

8           A.     Yeah.

9           Q.     So since the time that you wrote  
10          and submitted this report, are there other  
11          documents that you read and relied upon, other  
12          than the ones we discussed earlier, to help  
13          inform the opinions in this report?

14          A.     Yes. There was an article  
15          published -- oh, I'm sorry. I have read  
16          subsequent articles after this report, but that  
17          was not your question.

18          Q.     It was. Let me ask it again. So  
19          this report was submitted April 28 of this  
20          year.

21          A.     Yes.

22          Q.     So between April 28 and today,  
23          which I believe is September 10, have you  
24          reviewed -- that is the question. Does that  
25          make sense?

1 A. Yes.

2 Q. Okay.

3 A. I reviewed a recent article within  
4 the last month from the New England Journal of  
5 Medicine which documented the very high  
6 prevalence of substance abuse of people in  
7 sexual minority communities. I mentioned the  
8 Dahlen article to you. I reviewed a Griffin  
9 article. And, I'm sorry, I didn't prepare for  
10 that particular question --

11 Q. That is --

12 A. -- I'm sure there are other things.  
13 I'm constantly -- you know, I'm constantly  
14 being confronted by additional, evolving  
15 information.

16 Q. Thank you. You mentioned Griffin  
17 and the Dahlen study or article. Excuse me.  
18 Do you recall, by any chance, any of the  
19 authors of the New England Journal regarding  
20 substance abuse in sexual minority communities?

21 A. No, but it -- it is in one of the  
22 August issues. And if I'm wrong, it will be in  
23 the last issue of July.

24 Q. Okay. And in submitting this  
25 report, you did not attach a bibliography. Is

1           that correct?

2                   A.       Well, the bibliography is embedded  
3           in the report.

4                   Q.       Thank you.

5                   A.       If I may answer the previous  
6           question. I also reviewed a study in JAMA,  
7           "Surgey," I think by Almazan and Keuroghlian.  
8           You know, that's not pronounced correct, but  
9           he's a frequent author in this field.

10                  Q.       And do you remember the topic of  
11           that JAMA study?

12                  A.       Yeah. It was an attempt to  
13           demonstrate the positive outcome of gender  
14           conforming surgery.

15                  Q.       Okay. And your CV, which is  
16           attached -- I'm sorry. Is your CV attached as  
17           Exhibit A to this report? It will be at the  
18           very end.

19                  A.       Yeah, I see my CV is attached.

20                  Q.       Thank you. And does that  
21           accurately reflect your educational and  
22           employment background?

23                  A.       Yes.

24                  Q.       Okay. So if you'll turn on page 1  
25           of your report -- I'm sorry. Page 1 and 2, but

1 beginning with page 1, your report states that  
2 you received 23 separate pharmaceutical company  
3 grants to study various pro sexual medications.  
4 Is that correct?

5 A. Yes.

6 Q. And were any of these 23 grants  
7 related to the treatment of gender dysphoria?

8 A. No.

9 Q. Okay. And were any of these grants  
10 related to the treatment of transgender people?

11 A. No.

12 Q. Okay. You mentioned a U.S.  
13 national -- I'm sorry. Your report mentions a  
14 US National Institute of Health grant there at  
15 the bottom of page 1 for the study of sexual  
16 consequences of systemic lupus --

17 A. Erythematosus.

18 Q. Thank you. And the report says you  
19 were the co-principal investigator in that  
20 grant. Is that correct?

21 A. Yes.

22 Q. Okay. And did that study have to  
23 do with gender dysphoria?

24 A. No.

25 Q. Or transsexualism?

1           A.       No.

2           Q.       Okay. And then on page 2, the  
3 report lists you received five separate grants  
4 from the private Sihler Mental Health  
5 Foundation. Do you see that?

6           A.       Yes.

7           Q.       Okay. Of those five separate  
8 grants, did any of them relate to the treatment  
9 of gender dysphoria?

10          A.       Only indirectly in that one of the  
11 grants enabled us to set up The Center For  
12 Human Sexuality or what we called The Center  
13 For Marital and Sexual Health and The Center  
14 For Marital and Sexual Health included a clinic  
15 for the treatment of -- well, we didn't call it  
16 transgender in those days, but --

17          Q.       And do you remember what year you  
18 started that center, The Center For Sexual and  
19 Marital Health?

20          A.       That has two iterations. It began  
21 in 1973. And in 1992 or 1993, twenty years  
22 later, it had a separate location and had a  
23 separate name. It was called then The Center  
24 For Marital and Sexual Health. Before it was  
25 The Center For Human Sexuality.



1           Q.     So is The Center For Marital and  
2     Sexual Health synonymous with The Gender Clinic  
3     that you mention in your report?

4           A.     The Gender Clinic was just one of  
5     five or six clinics that were under the  
6     heading --

7           Q.     I see.

8           A.     -- of either The Center For Human  
9     Sexuality and subsequently The Center For  
10    Marital and Sexual Health.

11          Q.     Do you -- oh, I'm sorry.

12          A.     I'm sorry.

13          Q.     Okay. Do you recall any of the  
14    other sub-clinics that were within The Center  
15    For Marital and Sexual Health?

16          A.     Yes. There was a center for  
17    marital therapy. There was a center for male  
18    sexual problems, for female sexual problems.  
19    There was a center for paraphilia. And a  
20    center for -- and we had a program called the  
21    program for professionals for high level people  
22    who were accused of sexual boundary violations.  
23    In other words, The Center For Marital and  
24    Sexual Health in its previous form was a  
25    comprehensive look at human sexuality and all

1 of its problematic and developmental forms.

2 Q. Was that Center For Marital and  
3 Sexual Health in its initial iteration  
4 beginning in 1973, affiliated with Case Western  
5 Reserve University?

6 A. Yeah. It was an integral part of  
7 the department of psychiatry.

8 Q. Okay. So just going back to grants  
9 you've received. Have you received any grants  
10 not listed in your report to research and  
11 publish about the treatment of adults with  
12 gender dysphoria, accepting it may have been  
13 called something else in the past?

14 A. I think the answer to your question  
15 is, not specifically to do research. We did  
16 research in the 1970s and '80s, but that wasn't  
17 grant supported. It was supported by the  
18 university, you know, through salaries, et  
19 cetera, but not specific grants from outside  
20 agencies, with the exception of the Sihler  
21 Foundation.

22 Q. Correct, which provided for the  
23 establishment of The Center of Marital and  
24 Sexual Health center.

25 A. Yes.

1           Q.     Okay. And so then were there any  
2 external grants to research and publish about  
3 the treatment of children or adolescents --

4           A.     No.

5           Q.     -- with gender dysphoria?

6           Okay. Is that a, "No," when I included  
7 the, "Gender dysphoria," as well?

8           A.     That is a, no.

9           Q.     Okay. Thank you. Okay. So on  
10 page 3 of your report -- actually, I'm sorry.  
11 It's going to be the bottom of page 4 and to  
12 the top of page 5. Your report lists your  
13 experience as an expert witness, which we  
14 talked about a little bit earlier. I just --  
15 I'm wondering if you would confirm this is not  
16 an exhaustive list of your experience as an  
17 expert witness either via deposition or report.

18          A.     I wouldn't want to testify that  
19 this is absolutely complete, given the fact  
20 that I don't keep a list compiled. This is  
21 kind of compiled retrospectively from memory  
22 and documents. And so this is the best I could  
23 have done on April of 2021 --

24          Q.     Understood. Thank you. So --

25          A.     -- you might find something else.

1           Q.     Understood. So you have also  
2     offered expert testimony in a case called, Edmo  
3     versus Corizon in Idaho. Is that right?

4           A.     I'm not going to be a hundred  
5     percent sure about my answer, but I believe my  
6     name is associated with that case because I  
7     gave a workshop to the Department of  
8     Corrections in Idaho. And the person who --  
9     the person for the Department of Corrections  
10    testified that he was following the advice of  
11    Dr. Levine in the workshop. I think that's how  
12    my name is associated with that.

13          Q.     I see. Thank you for that  
14    clarification. Do you recall submitting a  
15    report in a case called Norsworthy versus Beard  
16    in California?

17          A.     Yes.

18          Q.     And in a case from Florida called  
19    Cohane --

20          A.     Yes.

21          Q.     -- versus Jones? Okay. And you  
22    mentioned the Soneeya case.

23          A.     Yes.

24          Q.     Do you recall being deposed in  
25    approximately 2011?

1 A. For the Soneeya case?

2 Q. Yes.

3 A. That's a ballpark figure --

4 Q. Yes, sir.

5 A. -- for my first deposition in the  
6 Soneeya case.

7 Q. Okay. And do you recall giving a  
8 second deposition in that case?

9 A. Yes.

10 Q. Approximately 2018?

11 A. Yeah, I would say three years ago.

12 Q. Okay. And then finally, there was  
13 a few day's worth of trial testimony in that  
14 same Soneeya case in approximately 2019. Do  
15 you recall that?

16 A. Oh, my answer to your previous  
17 question was recalling my testimony in the  
18 courtroom --

19 Q. Oh, I see. Okay.

20 A. -- so if you have records that I  
21 was deposed in 2018, I will trust your records.

22 Q. Okay. Okay. So going back to  
23 page 2 of your report, Dr. Levine.

24 A. (Witness complies.)

25 Q. At the bottom of page 2,

1        subparagraph c. It's a lower case, "c," there  
2        at the bottom. Do you see that?

3            A.        c?

4            Q.        Yes, sir.

5            A.        "Seven years..."?

6            Q.        Correct. It states you provided,  
7        "Seven years of six-hour Continuing Education  
8        Courses at the American Psychiatric Association  
9        Meetings on Love and Sexuality." Do you see  
10       that?

11          A.        Yes.

12          Q.        Do you recall approximately which  
13       seven years those were? Was it consecutive,  
14       separate?

15          A.        They were seven consecutive years  
16       in the -- I would say, in the 2000 teens, but  
17       whether they began in 2009 or 2010 or 2011, I  
18       don't know.

19          Q.        Understood. And do you remember  
20       any of the titles of those courses?

21          A.        Well, I would say what I wrote in  
22       c. is pretty much -- those words were probably  
23       in each of the titles. Sometimes, sexual  
24       problems, were in the title, but I like to  
25       emphasize that -- in my teaching, that while

1 love is a big issue in human life and human  
2 development, in medical professions, in  
3 particular in psychiatry, we avoid that topic.

4 And I like to bring the topic back up as  
5 manifested by the barriers to loving that  
6 arise. And so sometimes maybe, the barriers to  
7 loving, might have been a title. The course is  
8 somewhat different from year to year and  
9 certainly the title may vary from year to year.  
10 But, you know, it's Dr. Levine talking seven  
11 years in a row and he only has a few concepts  
12 and he -- it's old wine in new bottles, you  
13 know.

14 Q. Which sometimes still ages well,  
15 so. Do you recall -- and I understand you said  
16 the topics all generally had to do with one of  
17 those two words, "Love," or, "Sexuality."

18 A. Yes.

19 Q. Do you remember a course  
20 specifically focused on treatment for gender  
21 dysphoria?

22 A. I'm sure gender identity is part of  
23 these courses and the varieties of gender  
24 identity. I don't know if I listed it in this  
25 or not in this document or not the fact that I

1 have participated in a symposia at the American  
2 Psychiatric Association specifically on the  
3 treatment of gender dysphoria --

4 Q. Okay. Thank you.

5 A. -- in addition to other societies,  
6 I've given talks on gender dysphoria.

7 Q. I believe you listed some of those  
8 in your report. So moving on to page 3,  
9 looking at paragraph 1, again, at the bottom of  
10 page 3. Your report states that you're, "An  
11 infrequent or occasional reviewer for 25 other  
12 journals in various medical specialties and  
13 psychological and sociological journals on  
14 topics related to human sexuality." Do you see  
15 that?

16 A. I do.

17 Q. And it ends there on page 3. Are  
18 any of these journals dedicated solely to the  
19 study and treatment of gender dysphoria?

20 A. Yes.

21 Q. Which ones?

22 A. The International Journal.

23 Q. That's The International Journal --

24 A. Let me --

25 Q. Sorry.



1           A.       I'm sorry. I think I've answered  
2       that wrong. I have written -- I have had  
3       invited articles in that journal. I have an  
4       article in that journal. I don't think they've  
5       asked me to review for that journal, but I  
6       certainly have reviewed many articles for other  
7       journals on the topic of, we'll just call it  
8       transgenderism.

9           Q.       And just for clarity, Dr. Levine,  
10       it's The International Journal on  
11       Transgenderism. Do you recall the full title?

12          A.       International Journal of  
13       Transgender Health, I think it's called --

14          Q.       Okay.

15          A.       -- its name has changed over the  
16       years, too.

17          Q.       I'm sensing a theme there.

18          A.       I'm sorry?

19          Q.       I said, I'm sensing a theme on the  
20       change over the years. So you clarified to say  
21       you didn't review articles for that journal,  
22       but you did submit articles to that journal.

23          A.       Yes.

24          Q.       Besides the WPATH standards of care  
25       version 5, have you developed or helped to

1 develop treatment guidelines for the treatment  
2 of gender dysphoria?

3 A. Yes. I'm in the process at the  
4 moment.

5 Q. And are those guidelines associated  
6 with an organization?

7 A. Society -- yes. For the Society  
8 for the -- Society For Evidence-Based Gender  
9 Medicine.

10 Q. Do you have a -- is there an  
11 estimated publication date for those  
12 guidelines?

13 A. Had you asked me that question in  
14 April, I would have said, in July. If you ask  
15 me that question today, I would say, I don't  
16 know.

17 Q. Why is the estimated publication  
18 date unclear at this time?

19 A. Because the amount of work that has  
20 become available and was thought to be  
21 necessary in order to shape these  
22 recommendations or guidelines has expanded  
23 enormously and the -- and the scope has become  
24 far more multinational. And there is a  
25 movement afoot to bring back science into the

1 treatment of transgender medical treatments, to  
2 use your term, and there's so much information  
3 that needs to be collated and processed that  
4 I -- that I just think everyone is so busy that  
5 we can't get it done in the naive estimations  
6 that we first put out.

7 Q. Approximately how many people would  
8 you, again estimate, are involved working on  
9 these guidelines?

10 A. Well, I -- it's hard for me to know  
11 the answer to that question. I was on a  
12 conference call two days ago with 14 people  
13 from multiple countries. That wasn't  
14 specifically for these guidelines. It was for  
15 a Cochran analysis of the question of puberty  
16 blocking hormones, but there is such an overlap  
17 between the purposes of the review of the  
18 scientific principles in the Cochran scientific  
19 findings, in the Cochran analysis and in  
20 segments of publications, future publications  
21 that it makes it difficult for me to answer.  
22 I'm on a subcommittee for SEGM, the Society For  
23 Evidence Gender Based Medicine, and I think  
24 there are twelve people and about ten of them  
25 are different than the people I was in the

1 committee with yesterday.

2 Q. What's name of the subcommittee you  
3 just mentioned?

4 A. Psychotherapy subcommittee.

5 Q. If you have to estimate, how many  
6 members constitute the Society For Evidence  
7 Based Gender Medicine?

8 A. That's what I don't know --

9 Q. Okay.

10 A. -- because I keep discovering new  
11 members. I -- I think if you look at their  
12 website, they may have an approximate  
13 membership. They're looking for new members.  
14 And that's one of their goals, is to  
15 incorporate psychotherapists who are interested  
16 in this problem. We're trying to increase the  
17 number of people who feel qualified to help  
18 children and adult -- teenagers and adults with  
19 gender dysphoria.

20 Q. Do you remember when you first  
21 became officially involved with -- I'll use  
22 your shortening. Well, I'll just say the full  
23 name -- Society For Evidence-Based Gender  
24 Medicine?

25 A. SEGM.

1 Q. SEGM. Thank you.

2 A. I would say, it's about mid 2020 --

3 Q. Okay. And --

4 A. -- perhaps -- maybe spring of 2020.

5 Q. Do you know when the society was  
6 first started?

7 A. No, but it wasn't too many years  
8 before that. Perhaps two years before that.

9 Q. If you'll give me just a minute.  
10 Thanks for your patience. As a part of the  
11 guidelines that you're working on with SEGM,  
12 Dr. Levine, does that include the treatment of  
13 children and adolescents who may express gender  
14 discordance?

15 A. At this point it's primarily  
16 among -- it's for adolescents.

17 Q. It's primarily for adolescents?

18 A. It's -- let me correct my answer,  
19 please. It's divided into children from 3  
20 to 11 of early adolescents and adolescents who  
21 are of the age of majority and young adults.  
22 So there are children into adolescents and then  
23 sort of emancipated adolescents. And,  
24 "Emancipated," only means legally. And young  
25 adults probably to 25, 26.

1           Q.     And do the guidelines include any  
2     recommendations on treatment for adults from,  
3     say, 26 and older?

4           A.     I don't think -- that is not the  
5     subject of SEGM at this moment.

6           Q.     Thank you. Do those --  
7     understanding the guidelines are still being  
8     drafted, at this point do those guidelines  
9     recommend no treatment for any of those groups  
10    of children and adolescents you mentioned?

11           MR. KNEPPER: Objection, form.

12           A.     Absolutely not --

13           Q.     Okay.

14           A.     -- "Absolutely not," meaning we do  
15    not recommend no treatment.

16           Q.     Okay. Do the guidelines recommend  
17    no medical treatment for children or  
18    adolescents?

19           MR. KNEPPER: Objection, form.

20           A.     Number one, the guidelines are not  
21    formulated yet --

22           Q.     Understanding that, yes.

23           A.     -- so I don't think I can answer  
24    that question with any kind of validity.

25           Q.     Okay. Let's go back to your

1 report. And I'd like to -- we discussed a few  
2 moments ago, Dr. Levine, but your report  
3 mentions on page 4 at the top there, paragraph  
4 number 3 that in 1974, you founded the Case  
5 Western Reserve University Gender Identity  
6 Clinic. Do you see that?

7 A. Yes.

8 Q. Okay. And then your CV listed as  
9 Exhibit A mentions that around that same time,  
10 you became an assistant professor of psychiatry  
11 at Case Western Reserve University medical  
12 school. Is that correct?

13 A. Yes.

14 Q. And you became a full professor in  
15 1985ish?

16 A. Yeah, ish.

17 Q. Okay. And, "Full professor," does  
18 that denote that you received tenure that year?

19 A. Yes. I was tenured at the same  
20 time.

21 Q. Okay. Do you recall how much of  
22 the teaching you did from 1974 to 1993, was  
23 specifically about gender dysphoria?

24 A. As I was running six clinics, I  
25 would say, 16 percent.

1           Q.     Okay. That's a very specific  
2     percentage.

3           A.     And let me just add, because  
4     teaching of sexuality involves all aspects of  
5     human development and sexual expression during  
6     various stages of development, even when we  
7     were not teaching about the treatment specific  
8     of transgender individuals, we certainly were  
9     talking about identity, formation and evolution  
10    throughout the life cycle. So my answer of 16  
11   percent is with an asterisk. It probably could  
12   be more.

13          Q.     Understood. Do you recall any  
14    classes that were specifically titled, The  
15    study of gender identity development in adults?

16          A.     No. I didn't generally teach -- I  
17    occasionally gave lectures to departments of  
18    psychiatry across, you know, the region and the  
19    nation. But in my ordinary teaching at the  
20    university, it was mostly through supervision  
21    and through seminars, not classes per se. Like  
22    a college course that meets three times a week,  
23    that's not how my teaching went.

24          Q.     How did your teaching go? Can you  
25    explain more about --



1           A.       I would have a seminar on a topic.  
2       Cases would be presented to me. We would read  
3       the relevant papers and with the trainees,  
4       residents of psychiatry, interns in psychology,  
5       fellows in mental health work, nurses and so  
6       forth, they would, you know -- it would be case  
7       oriented.

8           Q.       Just so I understand it. When you  
9       said -- not an MD, as you may have guessed -- a  
10      case study would come to you meaning you would  
11      learn about a particular patient in the  
12      community and you would present that to  
13      residents or fellows and then you would read  
14      relevant papers related to that specific case?

15          A.       Sometimes it was that way. And  
16      sometimes it was the resident who presented the  
17      case --

18          Q.       Oh, I see.

19          A.       -- or the trainee who presented the  
20      case.

21          Q.       So can you describe for me the  
22      difference between that work that you were  
23      doing in, you know, approximately the  
24      years 1974 to 1993 versus the work you did  
25      after '93 as a clinical professor?

1           A.       Well, from 1977 on, my colleagues  
2       and I have had one or two, usually two  
3       conferences, case conferences a week to help  
4       our colleagues, both young and at the same  
5       level, present their cases and talk about the  
6       cases in group. We have found over the years,  
7       this is the most powerful educational  
8       experience that our trainees and our colleagues  
9       have ever had, as everyone seems to think that  
10      and attends these conferences eagerly.

11           And so transgender individuals were  
12      presented occasionally in those case  
13      conferences about impotent men and premature  
14      ejacula and inorgasmic women and, you know,  
15      people having sex with dogs. These kind of  
16      things were presented to us. And so to pick up  
17      with what you said before, sometimes we would  
18      then integrate that with something in the  
19      literature. It's a very powerful,  
20      sophisticating -- clinically sophisticating  
21      process that enables mental health  
22      professionals, even after they are trained  
23      officially, to feel comfortable in their role.

24           When you graduate psychiatric residency  
25      or psychology internship, although the world

1 thinks you're credentialed, you damn well know  
2 that you don't know a lot. So it's very  
3 helpful to talk to your peers, especially peers  
4 who are a little more experienced than you, to  
5 understand what needs to be done and what is  
6 the real problem and how you might use yourself  
7 to be helpful to this particular individual.

8 Q. Thank you. So you said from 1977  
9 onward, that was the general formulation of  
10 your work?

11 A. So in the second iteration of our  
12 work, those things continued.

13 Q. Okay. So from -- I guess what I'm  
14 asking: Is there a distinction -- or, I'm  
15 sorry. Let me start over. What, if any, is  
16 the distinction between your work as a full  
17 professor versus your work as a clinical  
18 professor?

19 A. Well, in the full professor time,  
20 not only some of my colleagues and my staff  
21 were at these two conferences a week but  
22 medical students and psychiatric residents and  
23 psychology interns were around the table.  
24 There were more people around the table.  
25 After 1992, we had a resident -- one or two

1 residents only and our staff. So in the first,  
2 say, twenty years, the focus was primarily on  
3 the younger colleagues; and on the last twenty  
4 years, it was on the staff colleagues with an  
5 occasional medical student and occasional  
6 person from the community. We also invite  
7 people from the community to these conferences,  
8 when they present their cases to us, for  
9 guidance.

10 MR. CHARLES: Thank you. Why don't  
11 we take a six-minute break. Would that be  
12 amenable?

13 MR. KNEPPER: That would be fine.

14 MR. CHARLES: Okay. And we'll come  
15 back at 10.

16 Does that work for you, Dr. Levine?

17 THE WITNESS: Fine.

18 MR. CHARLES: Great.

19 VIDEOGRAPHER: Off the record 9:55.

20 (Recess taken.)

21 VIDEOGRAPHER: On the record 10:07.

22 BY MR. CHARLES:

23 Q. Dr. Levine, going back to the  
24 gender identity clinic, still on page 4 of your  
25 report. You testified previously today that

1       you founded The Center For Marital and Sexual  
2       Health, which had the sub-clinic of The Gender  
3       Identity Clinic. And your report also states  
4       that in 1993, that clinic was renamed and moved  
5       to a new location and became independent of  
6       Case Western University. Is that correct?

7             A.       Yes.

8             Q.       How did that change come about?

9             A.       I left the University. And because  
10       we weren't part of -- I wasn't paid any longer  
11       from the University, we changed the name of the  
12       clinic.

13            Q.       So the University was not  
14       subsidizing any of the work of the clinic at  
15       that point?

16            A.       Not after 1993.

17            Q.       Okay. And is that why they asked  
18       you to change the name?

19            A.       Yes.

20            Q.       Okay. And what did you change the  
21       name to at that time?

22            A.       The Gender Identity Clinic.

23            Q.       Where was that clinic then housed?

24            A.       About 25 minutes east of the  
25       University --

1 Q. Was it --

2 A. -- in a commercial building where  
3 our clinic was. It was just, you know, a  
4 conference room in our clinic.

5 Q. And that was within -- was that  
6 within a business --

7 A. It was --

8 Q. -- a psychiatric practice?

9 A. I'm sorry. I interrupted you.

10 It was within The Center For Marital  
11 Health, which was a business that I and two  
12 other people started and owned and ran. And in  
13 that business, we continued the same kind of  
14 work we did with the University minus the large  
15 number of trainees.

16 Q. You mentioned that after '93, you  
17 were not being paid by the University. Were  
18 you providing your clinical psychiatric  
19 professorship gratuitously?

20 A. Meaning without pay? Yes.

21 Q. Okay. Do you know if, after you  
22 moved the clinic away from Case Western  
23 Reserve, if Case Western Reserve University  
24 Medical School created a separate gender  
25 identity clinic?

1           A.     Years later they did --

2           Q.     Oh, sorry.

3           A.     -- I would say, they created a  
4     separate clinic perhaps in 2017, 2016.

5           Q.     Do you know the name of that  
6     clinic?

7           A.     I don't think it's in the  
8     department of psychiatry. I think it's in the  
9     department of pediatrics. And the answer to  
10    your question is, no.

11          Q.     Does The LGBTQ and Gender Care  
12    Program sound familiar?

13          A.     No.

14          Q.     But have you -- sorry. Have you  
15    evaluated any patients through that separate  
16    clinic that Case Western Reserve has?

17          A.     No. Much to my dismay, that clinic  
18    was formed and maintained without any input  
19    from me, who I thought was one of the experts  
20    in the field.

21          Q.     Do you know if they have  
22    psychiatrists, within that clinic?

23          A.     I -- I'm not knowledgeable about  
24    the composition of that clinic. There is a  
25    very strong liaison between our department of

1 psychiatry and the child psychiatry division of  
2 our department and pediatrics. They have  
3 programs together. So I wouldn't be surprised  
4 if one of the child psychiatrists or the child  
5 psychiatry residents, what they call fellows,  
6 may be involved, but I have no definitive  
7 knowledge about that and I may be quite correct  
8 or quite wrong.

9 Q. Understood. When you say, "Our,"  
10 you mean Case Western Reserve's department of  
11 child psychiatry and --

12 A. Yes. "Our," means the -- the  
13 department of psychiatry has a division of  
14 child psychiatry, a separate training program  
15 for fellows in child psychiatry.

16 Q. I'm just confirming you don't mean,  
17 "Our," to mean the separate business that you  
18 run with your colleagues.

19 A. Yes. Well, see, part of my  
20 identity is I'm a professor at Case Western  
21 Reserve. So I still feel an affiliation and  
22 part of that team. I just am not paid by it.  
23 I'm not geographically located there. I still  
24 teach there. In fact, they have a professor --  
25 they have an annual lecture called The Stephen



1       Levine Lecture -- Stephen Levine Lecture in  
2       Sexuality.

3               Q.       So when you say you still teach  
4       there, it is akin to what you discussed earlier  
5       about one or two residents discussing a case  
6       with you on a somewhat infrequent basis?

7               MR. KNEPPER:   Objection, form.

8               A.       Your --

9               Q.       Let me rephrase that.   Is it what  
10       you discussed before about going over cases  
11       with one or two residents?

12              A.       I see you don't understand what I  
13       said before, so I'm going to clarify it.

14              Q.       Thank you.

15              A.       Continuously, since the -- I moved,  
16       our team moved, I've had residents rotate with  
17       me at least one day a week or one half day a  
18       week minimum, sometimes one day a week and  
19       sometimes two residents spending a half or one  
20       day a week seeing patients with me and  
21       attending those conferences.   That's been  
22       rather continuous since 1993.   And that then  
23       continued the process of the previous twenty  
24       years.

25              They present cases, but they see -- they

1 see my patients with me. And almost every  
2 year, I present Grand Rounds to the entire  
3 department of psychiatry at Case Western  
4 Reserve. So I am involved as an educator and  
5 as a teacher for the, not just residents but  
6 for the faculty as well. So when I say, you  
7 know, "My department," or, "Our department,"  
8 it's a reflection of what I do even though I'm  
9 not full-time in the department.

10 Q. Understood. Thank you. Is it  
11 correct to say you're continuing your work,  
12 just not in as large scale capacity as you were  
13 as a full professor?

14 A. That would be correct.

15 Q. Okay. So looking at your report  
16 again, page 4, paragraph 3, you mentioned that,  
17 "Over the years, our clinic evaluated and  
18 treated hundreds of patients who were  
19 experiencing a transgender identity." Do you  
20 see that? You don't need to see that, but do  
21 you see that?

22 A. That's correct. That statement is  
23 correct.

24 Q. Okay. You also write, "An  
25 occasional child was seen during this era."

1           What do you mean by, "This era"?

2           A.       Before 1993.

3           Q.       Okay. And what do you mean by,  
4           "Occasional"?

5           A.       I would say that 95 percent of the  
6           patients that we saw were 16 and 17, 18 and up.  
7           We could debate what the word, "Child," means,  
8           but to me an 11-year-old is a child, even  
9           a 13-year-old is a child, especially when my  
10          children were 13. And so we -- in the first  
11          twenty years, transgender issues were primarily  
12          an older teenager and adult, mostly adult  
13          issues. In recent years, I would say, 12, 15  
14          years, the number of adolescents appearing in  
15          gender clinics at our place and everywhere as  
16          far as I can see has increased exponentially,  
17          especially the number of teenage girls who are  
18          declaring themselves trans boys.

19          Q.       So how many -- sorry. So the first  
20          twenty or so years, you said approximately 5  
21          percent of all patients were children.

22          A.       Were younger -- on the younger end  
23          of the spectrum --

24          Q.       Right.

25          A.       -- yes.

1           Q.     And then you've noted in your  
2     clinic, an increase in children and adolescents  
3     in the last 12 to 15 years.

4           A.     In our clinic, there's been a  
5     dramatic increase in teenagers and --

6           Q.     Okay. And I guess how would you --  
7     what percentage of the patients regularly being  
8     seen at your separate clinic would you say are  
9     adolescents?

10          A.     Repeat that question.

11          Q.     So your clinic now that is separate  
12     from Case Western --

13          A.     Yes.

14          Q.     -- your private practice, what  
15     percentage of patients being routinely seen  
16     would you estimate are adolescents?

17          A.     Ninety.

18          Q.     You said, "Ninety percent," of all  
19     patients?

20          A.     Yes. I think ninety percent of our  
21     patients are now adolescents, new patients  
22     coming in.

23          Q.     Okay. So let me -- how many  
24     currently returning -- or, I should say, how  
25     many regularly returning patients are you

1       seeing at your clinic who are adults?

2               A.       Number one, I don't keep track of  
3       the numbers. There are like ten different  
4       therapists in our clinic. And not all of them  
5       are in our gender diversity clinic, but even  
6       those who aren't sometimes have adult patients  
7       who trans identify. I don't really know what  
8       numbers and therefore I don't know what  
9       percentage. I can just tell you about the  
10      people who are coming these days to see us are  
11      largely adolescents, some of whom are 14, some  
12      of whom are college age, freshmen or  
13      sophomores.

14              I see people, because I've written  
15      articles. Parents sometimes read articles and  
16      they call me and have a consultation with me  
17      with or without their child. But almost all of  
18      those -- one recent exception was a 22-year-old  
19      person, but I never actually met the person. I  
20      just met with the parents. So it's hard for me  
21      to answer that question and -- but I would just  
22      say the predominant -- say in the last two  
23      years, the predominant person who comes to see  
24      us is a teenager.

25              Q.       Okay. I understand you saying it's

1 hard to answer that question as regards to  
2 adults, but you offered a fairly definitive  
3 answer as to adolescents of approximately 90  
4 percent. So as a part of your work at your  
5 private practice, do you supervise other  
6 clinicians?

7 A. Yes.

8 Q. Approximately how many?

9 A. There's six members of our gender  
10 diversity team. And at our conferences, I'm  
11 the most supervisory person there.

12 Q. And are you still seeing individual  
13 patients in addition --

14 A. Personally?

15 Q. Yes.

16 A. I am.

17 Q. Approximately how many patients do  
18 you see regularly?

19 A. I don't mean to be cute, but,  
20 "Regularly," could be once a year, but I think  
21 you're asking about how often -- how many  
22 people do I see frequently; that is, regularly  
23 at weekly or twice a month intervals. I see  
24 lots of people who do come back for a follow  
25 up, you know, in six months or when they need

1       it, you see? But at this moment -- this week,  
2       I have one patient that I see weekly, who is a  
3       transgender teen. My staff -- if I can be  
4       presumptuous to call them, "My staff" -- our  
5       staff sees more.

6               Q.       And thinking about the last year,  
7       approximately how many adult patients did you  
8       see -- and let's use your framing of,  
9       "Regular." So that could be one, for one  
10      followup visit or that could be for more -- how  
11      many adult patients did you see for treatment  
12      of gender dysphoria?

13             A.       Approximately six.

14             Q.       And using that same framing of,  
15      "Regular," how many children, so under age 11?

16             A.       In the last year?

17             Q.       Yes, yes. In the last year.

18             A.       Zero.

19             Q.       How many adolescents in regular  
20      treatment for gender dysphoria would you  
21      approximate you've seen in the last five years  
22      individually, exclusive of your supervision of  
23      other clinicians?

24             A.       If you ask me the question in the  
25      last year, I would have told you five or six,

1 but since you ask it as a five-year period, I'm  
2 at a loss to tell you whether it's twelve or  
3 fifteen. I --

4 Q. An approximate is fine. Thank you.

5 A. -- let's just say a dozen with an  
6 asterisk, very approximate.

7 Q. And jumping a little bit more in  
8 terms of time. How about the last ten years?

9 A. Again, using the same asterisk, I  
10 would say, double it.

11 Q. Okay. And you said zero people  
12 under age 11, so children this last year. What  
13 about in the last five years?

14 A. Oh, two years ago, we had this  
15 charming little 6-year-old. One of my  
16 colleagues specializes in children and I get to  
17 hear about these cases. Occasionally I get to  
18 meet the parents, but I personally have not  
19 delivered a psychotherapeutic care or  
20 evaluation directly of a child with the  
21 exception of this one person that I was  
22 involved with.

23 Q. And that was this last year, you  
24 said?

25 A. That was -- I think it was probably



1 two, two and a half years ago.

2 Q. Oh, okay. And what kind of  
3 treatment -- I should say, have you referred  
4 any of those adolescent patients for additional  
5 treatment, besides psychotherapy, for the  
6 treatment of gender dysphoria?

7 A. Yes.

8 Q. And what kinds of treatment have  
9 you referred them for?

10 A. For endocrine treatment.

11 Q. Okay. And approximately what  
12 percentage of those adolescent patients have  
13 you referred for endocrine treatment?

14 A. Give me the timeframe of that  
15 question, please.

16 Q. Sure. So you said a few moments  
17 ago, in the last five years, you saw maybe,  
18 asterisk, 12 to 15 adolescent individually  
19 yourself. Of those 12 to 15, what would be the  
20 approximate percentage you referred for  
21 endocrine treatment?

22 A. I'm hesitating to answer the  
23 question, because some of those children have  
24 been taking testosterone or estrogen  
25 surreptitiously from their parents. And while

1 I didn't refer them for the treatment, I was  
2 seeing them while they were taking the  
3 treatment. So if we're only talking about  
4 adolescent -- referrals of adolescents for  
5 hormones, I would say a very small percentage  
6 of those, say, I guess you would say 10  
7 percent.

8 Q. Fair enough. Have you had yourself  
9 individually as a clinician, have you had any  
10 non-transgender children who you have made a  
11 referral for endocrine treatments related to  
12 other conditions?

13 A. No.

14 Q. Okay. So then zooming out 30,000  
15 foot view of your 48-year career now, would you  
16 say overall, you have provided treatment --  
17 that is, psychiatric treatment -- to mostly  
18 adults experiencing gender dysphoria, gender  
19 identity issues?

20 MR. KNEPPER: Objection, form.

21 A. I would say that throughout my  
22 career, we should divide my career into the  
23 first twenty years where mostly adults were  
24 seen by our team and myself. And then we ought  
25 to talk about the last ten or fifteen years

1 where the number of adults has diminished and  
2 the number of adolescents has increased  
3 dramatically.

4 Q. Okay. Thank you. So as a part of  
5 your private practice, do you write letters of  
6 authorization for endocrine treatments?

7 A. Yes.

8 Q. And do you write letters of  
9 authorization for gender affirming surgeries?

10 A. I have. I have not recently,  
11 because most of my patients are 13 or 15 or 16,  
12 you know.

13 Q. Okay. And I'm sorry. Just by,  
14 "Recent," when was the last time you wrote a  
15 letter of authorization for a gender affirming  
16 surgery for an adult?

17 A. Probably twelve months ago.

18 Q. Okay. And over the course of your  
19 career focusing on your treatment of adults  
20 experiencing gender identity issues, for what  
21 percentage of those patients would you estimate  
22 you wrote a letter of authorization for gender  
23 affirming surgery for?

24 MR. KNEPPER: Objection, form.

25 A. Again, I would like to put an

1        asterisk to whatever I answer this question as.  
2        I have not kept track of those figures. I have  
3        written -- I've written or cosigned letters for  
4        hormone treatments and for gender confirming  
5        surgeries for many people. There were more  
6        people in the '70s and '80s than in recent  
7        decades. In part as a reflection of my own  
8        evolution of understanding of these problems  
9        and in part it's a reflection of the demography  
10       of patients who are coming to see me. I really  
11       would not like to answer that question, only  
12       because I don't know if the word, "Fifteen," or  
13       the word, "Twenty-five," or the word,  
14       "Thirty-five," is more accurate --

15                Q.        Understood.

16                A.        -- but I can tell you, I have  
17        written letters, especially in the early years,  
18        for the things that you're making reference to.

19                        -   -   -   -   -

20                        (Thereupon, Deposition Exhibit 2,  
21                        12/21/2020 Zoom Deposition of  
22                        Stephen B. Levine, M.D., was marked  
23                        for purposes of identification.)

24                        -   -   -   -   -

25                Q.        Okay. For the record, I'm showing

1 Dr. Levine what has been marked as Exhibit 2.  
2 So this is Zoom deposition of Stephen Levine  
3 from Monday, December 21, 2020. Have you seen  
4 this document before, Dr. Levine?

5 A. Never.

6 Q. Okay. Do you recognize the title  
7 on the first page of this document?

8 A. Yes.

9 Q. And what does it say there in the  
10 caption?

11 A. The, "Zoomed Deposition of Stephen  
12 Levine."

13 Q. And was this from your deposition  
14 in the Claire versus Florida Department of  
15 Management Services case?

16 A. I presume so.

17 Q. Okay. So if you would please turn  
18 to what is marked as page 29. And I'm going to  
19 start reading at line 10. And if you'll just  
20 follow along with me and let me know if I'm  
21 reading too quickly.

22 So, Question: "Okay. What sorts of  
23 treatments do you provide for your patients  
24 with gender dysphoria?"

25 Answer: "Psychiatric evaluation of the

1 patient and the family, the parents and the  
2 other siblings; psychotherapy to further the  
3 process of understanding this whole phenomenon;  
4 recommendations for hormones and occasionally  
5 recommendations for -- depending on the  
6 biologic sex of the patient, for genital or  
7 breast surgery."

8 Question: "How many patients have you  
9 recommended hormone therapy for?"

10 Answer: "You mean over 47 years?"

11 Question: "Let's start with 47 years,  
12 yeah."

13 Answer: "I don't know. Can I give you a  
14 gross estimate?"

15 Question: "Sure."

16 Next page, page 30.

17 Answer: "Thirty-five."

18 Question: "Okay."

19 Answer: "Maybe now that's probably too  
20 low. Probably 75."

21 Question: "Okay. Again, just for  
22 clarity, that's of the four to five hundred,  
23 which is itself an estimate; is that right?"

24 Answer: "Yes."

25 Question: "Okay. How many would you say

1 in the past year you recommended for hormones?"

2 Answer: "In your sentence, 'you' refers  
3 to me as an individual therapist and me as a  
4 supervisor of other therapists. Okay?"

5 Question: "Okay."

6 Answer: "I would say five."

7 Question. "Okay. And in your previous  
8 answer where you said 75 as a gross estimate  
9 over the 47 years, was that personally or you  
10 plus you as a supervisor?"

11 Answer: "The latter."

12 Question: "Okay. Same question but  
13 about surgery. How many -- over the 47 years,  
14 how many individuals have either you or you as  
15 a supervisor -- sorry, together, both you and  
16 you as a supervisor, recommended for surgery?"

17 Answer: "Again, this is -- I'm  
18 estimating here" -- top of page 31 -- "Twenty."

19 "Okay. And then in the past year, how  
20 many have both you individually and you as a  
21 supervisor recommended for surgery?"

22 Answer: "Again, surgery would be  
23 mastectomies for biologic males who are trans  
24 males. I would probably say two."

25 Question: "Okay. Since you mentioned

1 the specific surgery mastectomy, can you tell  
2 me what other surgeries, if any, you have  
3 recommended in the past?"

4 Answer: "It would be genital surgery."

5 Question: "In the sense of -- can you  
6 name the specific surgeries?"

7 Answer: "What you called it...earlier  
8 today, gender-conforming surgery where the  
9 penis is removed and a neovagina is made where  
10 the scrotum turns into a labia."

11 Question: "Okay" -- actually, let's stop  
12 there. Dr. Levine, did I read that correctly?

13 A. Yes.

14 Q. Thank you. So of the patients that  
15 you have seen regularly during your career,  
16 could you give me an estimate of how many  
17 returned for followup care with you?

18 MR. KNEPPER: Objection, form.

19 A. The recommendation for followup  
20 care is almost universal. The number of people  
21 who follow through with followup care is  
22 minimal. And this is not just true for me.  
23 This has been a problem throughout the field  
24 forever. So I do see people, sometimes thirty  
25 years after, sometimes ten years after. They



1       come in. Sometimes they come in with  
2       depression and sometimes they come in to tell  
3       me how well they're doing. So I -- I just  
4       would say it's a very small percentage. It's  
5       not because I don't welcome them. I'm  
6       delighted to see them in follow up. In fact, I  
7       sometimes call people who have seen me in for a  
8       follow up and they almost never return my phone  
9       calls.

10           Q.       Going back to your private  
11       practice. Is the name of that practice DeBalzo  
12       Elgudin Levine & Risen? I apologize for  
13       butchering some of those names.

14           A.       I will pronounce it correctly for  
15       you.

16           Q.       Thank you.

17           A.       The name of the practice is DeBalzo  
18       Elgudin Levine & Risen.

19           Q.       Okay. If I use the acronym,  
20       "DELR," will that be understood to mean your  
21       practice?

22           A.       Yes.

23           Q.       Okay. And is this the private  
24       practice to where you moved the gender identity  
25       clinic in '93?

1           A.       No. The private practice that I  
2 moved my gender identity and all my other work  
3 was called Levine, Risen & Associates. That  
4 practice existed for -- until 2017, at which  
5 time the owners, which were reduced to two  
6 owners because a previous owner married and  
7 moved to Florida, we sold the practice to  
8 DeBalzo and Elgudin. And in order to maintain  
9 the reputation of the practice, they kept the  
10 names, "Levine & Risen." So that DELR is a  
11 relatively new entity. It employs me. I no  
12 longer am the boss and that's where I stand.

13           Q.       Thank you for that. So, "Levine &  
14 Risen," at the end --

15           A.       Risen.

16           Q.       Thank you. "Levine & Risen," at  
17 the end of that title does not connote  
18 co-ownership of that practice?

19           A.       Correct.

20           Q.       Thank you.

21                   - - - - -

22                   (Thereupon, Deposition Exhibit 3,  
23 Typewritten Three-Page Document  
24 Entitled, "Special Programs," was  
25 marked for purposes of

1 identification.)

2 - - - - -

3 Q. So for the record, I'm showing  
4 Dr. Levine what has been marked as Exhibit 3.  
5 It's a two-page printout from the DELR website,  
6 "Special Programs," tab. Have you seen this  
7 material before, Dr. Levine?

8 A. I might have, but I have no  
9 recollection --

10 Q. So --

11 A. -- I didn't -- I didn't write it.

12 Q. Okay. You anticipated my next  
13 question. Could you look at the middle of that  
14 page, please, the, "Gender Diversity Program."  
15 That is the title there. Do you see that?

16 A. I can.

17 Q. Is that a synonym for The Gender  
18 Identity Clinic at the private practice now?

19 A. It's the current name of the  
20 program.

21 Q. And that's the program still  
22 continuing to do the work we discussed earlier?

23 A. Yes.

24 Q. Okay. For patients coming to --  
25 let's start with DELR generally. For patients

1 coming to the practice generally, is commercial  
2 insurance accepted by at least some of the  
3 clinicians at DELR?

4 A. Yes.

5 Q. Would you say it's accepted by most  
6 of the clinicians at DELR?

7 A. Yes.

8 Q. Okay. Do you accept commercial  
9 insurance?

10 A. I accept Medicare only.

11 Q. Only. Okay. So not private  
12 insurance or Medicaid?

13 A. No.

14 Q. And was there a time in your career  
15 that you accepted -- excuse me. Was there a  
16 time in your career where you accepted private  
17 commercial insurance aside from Medicare?

18 A. When I was at the University, the  
19 clinics I ran accepted all insurances. My  
20 personal private practice, I think at one time  
21 did but the reimbursements were so low that I  
22 needed to earn a living. So in my private  
23 practice, I stopped accepting commercial  
24 insurance.

25 Q. And when you say, "In your private

1 practice," does that note approximately 1993 or  
2 a different time?

3 A. In 1973, I was hired as an  
4 assistant professor of psychiatry to develop  
5 programs both educational and clinical programs  
6 for human sexual concerns. And half of my time  
7 I -- my salary was \$30,000 for half of that  
8 time and the other half I was able to have a  
9 private practice where I could earn more than  
10 \$30,000 a year.

11 Q. I see. When approximately did you  
12 stop accepting commercial insurance?

13 A. I'm guessing. 1980.

14 Q. Okay. Can you just tell me about  
15 your choice to accept Medicare?

16 A. Well, I like the concept of  
17 Medicare. And there was a time I became a  
18 Medicare insuree. And I felt like if I was  
19 going to my doctor handing them my Medicare  
20 card, I at least should be able to do the same  
21 thing for my patients.

22 Q. Understood. I'm sorry. I didn't  
23 mean to interrupt you.

24 A. So I would say, at least 14, 15  
25 years ago.

1           Q.     Do you think as a general matter  
2     that it's good for patients who come to DELR  
3     for services related to gender dysphoria to be  
4     able to have insurance coverage of that care?

5           MR. KNEPPER:   Objection, form.  
6     Beyond the scope.

7           A.     Well, the people who come to DELR  
8     are generally coming for evaluation and  
9     psychotherapy services. And I believe it's  
10    very important that people have access to  
11    mental health care and that mental health care  
12    for many of our patients are not wealthy,  
13    affluent people. And the fees that even  
14    masters prepared people charge can become  
15    prohibitive. And so I think it's a very nice  
16    idea, the psychiatric services, mental health  
17    services evaluation and ongoing treatments,  
18    with or without medication, it would be nice to  
19    be able to cover those things, yes. I think  
20    that's a long answer, yes.

21          Q.     Understood. And thinking about the  
22    treatment that you refer patients out for, the  
23    endocrine treatments in particular, do you  
24    think it is generally good if you provide  
25    authorization for that treatment that the

1 patient be able to afford it?

2 MR. KNEPPER: Objection, form.

3 A. May I say, of course?

4 Q. You may. You may say anything you  
5 would like.

6 A. Of course.

7 Q. Thank you. Well, anything you  
8 would like within reason.

9 If you make a letter of authorization for  
10 a patient for the treatment of gender dysphoria  
11 specifically related to a surgical treatment,  
12 do you think it is good that they be able to  
13 access that treatment that you've authorized?

14 MR. KNEPPER: Objection, form.

15 A. Not to be cagey, I want to talk  
16 about one word you just used in that sentence.  
17 I need you to understand that historically in  
18 our clinic for those 47 years, our clinics  
19 for 47 years, we are not in the business and we  
20 have never been in the business of recommending  
21 surgery or recommending hormones. We recommend  
22 a continued evaluation so that we -- the person  
23 can make up their mind how to proceed.

24 It is not our knowledge base to know  
25 who's going to do better and who's going to do

1 worse and who is not going to have any  
2 difference at all with hormones or with  
3 surgery. So what we do is we say, we will  
4 write a letter of support for endocrine  
5 treatment or for hormones if this is what you  
6 want. And we say what our concerns are. We  
7 tell the endocrinologist and we tell the  
8 surgeon what our concerns are and that we  
9 see -- we have reservations about this, and  
10 these are our reservations, but the patient has  
11 decided this is what he or she wants to do.

12 And so we write a letter of support, but  
13 I don't -- every time you use the word,  
14 "Recommendation," there's part of me that wants  
15 to say, no, we do not recommend. We have never  
16 recommended. We have not had the knowledge  
17 base. We have not had the clinical experience  
18 and the knowledge base to say, I'm a doctor. I  
19 know this field. This is what I recommend to  
20 make you better. We do not talk that way. We  
21 do not think that way. And so I may want to  
22 always put an asterisk to any sentence that you  
23 use the word, "Recommend." I need you to  
24 understand that that's where I'm coming from.

25 MR. CHARLES: Thank you,



1 Dr. Levine.

2 Excuse me just a moment. Can you read  
3 back my question. I don't recall if I used,  
4 "Recommend." I thought I used,  
5 "Authorization." I just want to make sure.

6 (Record was read.)

7 MR. CHARLES: If we could just go  
8 off the record for a second.

9 VIDEOGRAPHER: Off the record 10:52.

10 (Discussion held off the record.)

11 VIDEOGRAPHER: On the record 10:53.

12 BY MR. CHARLES:

13 Q. Okay. Thank you for that  
14 clarification, Dr. Levine. I'll be more  
15 careful about using terminology more close to,  
16 "Authorization," rather than, "Recommendation,"  
17 and I understand your distinction in your  
18 practice. So do you, though, think it's good,  
19 if you are authorizing a treatment, a patient  
20 has said, This is the treatment I would like,  
21 and you have done an evaluation and determined  
22 that you will write, as you said, a letter of  
23 support, do you then, as a practitioner, think  
24 it's good that they can access it, that they  
25 can afford it?

1 MR. KNEPPER: Objection, form.

2 A. Yes.

3 Q. And similarly, if you were treating  
4 this patient and you determined they understood  
5 the risks and, again, you were providing a  
6 letter of authorization and you thought the  
7 treatment would be psychologically  
8 beneficial --

9 MR. KNEPPER: Objection --

10 Q. -- would you want that treatment to  
11 be covered by insurance, if that were the only  
12 means by which a patient could access it?

13 MR. KNEPPER: Objection, form.

14 Q. I can revise my question, if that  
15 would help.

16 A. I understand your question. I'm  
17 just thinking about your questions, how to  
18 answer your question. I work in the state of  
19 Ohio. Many of my patients do not have  
20 insurance for these -- for example, for these  
21 kind of surgeries. They know they don't have  
22 insurance for these kind of surgeries and they  
23 save up for these kind of surgeries. This is  
24 part of their determination, that they have  
25 enough money to pay for the surgery. If I

1       believed that the surgery was beneficial and  
2       was going to create a lifetime of happiness and  
3       at least an equal chance to create a full,  
4       successful life, I would answer your question,  
5       yes.

6               I'm skeptical about the answer to, does  
7       this particular surgery enable this particular  
8       person to have a full and successful life. I'm  
9       skeptical. I'm uncertain of whether this is  
10      true. I'm uncertain whether it's worth, for  
11      example, saving up \$30,000 to have genitals  
12      redone with a high risk of problems in those  
13      genitalia. And so I don't want to answer your  
14      question, I believe each ought to have  
15      insurance coverage.

16             I believe we should establish  
17      scientifically the efficacy of these treatments  
18      and we should know the number -- we should know  
19      the impact of these treatments, not only on  
20      their anatomy and their physiology, but we  
21      should know the impact of these treatments on  
22      their capacity to live a functional life. I  
23      don't know the answer to that question in a  
24      scientific way and therefore, I hesitate  
25      slowly -- I hesitated to answer your question

1 immediately.

2 Q. But if the only way that the  
3 patient could access that surgery were through  
4 insurance, as an agent of the patient, would  
5 you want them to be able to do that?

6 MR. KNEPPER: Objection, form.

7 A. As an agent of the patient, I  
8 explain to the patient what I know about the  
9 long-term outcome of members of trans  
10 communities. That's how I am the agent of the  
11 patient, to teach them what is known about this  
12 subject and to separate fantasy from reality as  
13 is known in an objective appraisal. For  
14 example, the New England Journal of Medicine  
15 and other major medical journals refers to the  
16 trans community as, "Marginalized and  
17 vulnerable," and vulnerable -- then they list  
18 ten different areas of vulnerability.

19 So I am the agent of the patient. I am  
20 the agent of the patient's current happiness  
21 and future happiness, their current health and  
22 their future health. And what I know about the  
23 future health of many people in the trans  
24 community is very worrisome to me. And so I am  
25 the agent of the patient, but, you see, my

1 concept of agency and being a doctor, I think  
2 is different than the implication of your  
3 question.

4 Q. Is the worrisomeness for a  
5 patient's future health, is that a reason to  
6 deny all medical care for gender dysphoria?

7 A. Absolutely not.

8 Q. Dr. Levine, I'd like to return back  
9 to, I believe it's Exhibit 2, the Claire  
10 deposition. And please, if you would turn to  
11 page 156.

12 A. I'm sorry. 150 what?

13 Q. Page 156. And beginning at line 10  
14 on page 156, Dr. Levine, I'll read it, if  
15 you'll just follow along, please.

16 Question: "Are you aware that this case  
17 concerns an insurance exclusion that is  
18 categorical at preventing" --

19 Skipping to line 15.

20 "-- hormones and surgery as a treatment  
21 for gender dysphoria?"

22 Answer: "I am aware that your plaintiffs  
23 are suing to get coverage for -- that is not  
24 provided by their particular insurance. I am  
25 aware of that."

1           Question: "Do you think that exclusion  
2           is appropriate?"

3           Answer: "I've already answered that  
4           question. I" --

5           Turning to page 157 --

6           -- "believe."

7           Question: "What is the answer?"

8           I'm sorry. Dr. Levine, are you there?

9           A.       Yes.

10          Q.       Okay. On line 3, Question: "What  
11          is the answer?"

12          Line 4, Answer: "That it's a political  
13          decision that varies from state to state, and  
14          it belongs to the process of political science  
15          and the courts and not doctors."

16          Question: "And if you yourself were  
17          treating them and determined that they  
18          understood the risks and you thought the  
19          treatment would be psychologically beneficial  
20          and provided letters of authorization to them,  
21          you would want that treatment to be covered by  
22          insurance; is that correct?"

23          Answer: "I am an agent of the patient, I  
24          want what's best for the patient, and  
25          especially if the patient couldn't otherwise

1       afford it, I would wish for my patient to have  
2       it, yes."

3               Okay. Did I read that correctly,  
4       Dr. Levine?

5               MR. KNEPPER: I'm going to object,  
6       because you left out portions of the  
7       transcript --

8               MR. CHARLES: Okay.

9               MR. KNEPPER: -- so, you know,  
10       there are a number of objections as to form by  
11       the attorney there that we don't know the full  
12       content of those objections, but, you know, the  
13       purpose is to note that the answer might not  
14       actually reflect -- there might be issues,  
15       either inconsistencies or otherwise within the  
16       questions being asked, so. I mean, I will  
17       admit that you read the -- I don't have any  
18       problem stipulating --

19              MR. CHARLES: I can go back and  
20       re-read it with the objections.

21              MR. KNEPPER: If you want to,  
22       that's fine, but I just -- I don't want him to  
23       admit to something that's manifestly incorrect,  
24       at least as to the text of the document.

25              MR. CHARLES: Sure, no problem. I

1 can redo that.

2 BY MR. CHARLES:

3 Q. Okay. One more time, Dr. Levine.

4 Starting at page 156, line 10.

5 Question: "Are you aware that this case  
6 concerns an insurance exclusion that is  
7 categorical at preventing --

8 Ms. Coles: Form.

9 By Mr. Tilley:

10 -- hormones and surgery as a treatment  
11 for gender dysphoria?

12 Ms. Coles: Form."

13 Answer: "I am aware that your plaintiffs  
14 are suing to get coverage for -- that is not  
15 provided by their particular insurance. I am  
16 aware of that.

17 By Mr. Tilley:

18 Do you think that exclusion is  
19 appropriate?

20 Ms. Coles: Form."

21 Answer: "I've already answered that  
22 question, I believe.

23 By Mr. Tilley:"

24 Question: "What is the answer?"

25 Answer: "That it's a political decision



1       that varies from state to state, and it belongs  
2       to the process of political science and the  
3       courts and not doctors."

4               Question: "And if you yourself were  
5       treating them and determined that they  
6       understood the risks and you thought the  
7       treatment would be psychologically beneficial  
8       and provided letters of authorization to them,  
9       you would want that treatment to be covered by  
10      insurance; is that correct?"

11             Ms. Coles: Form."

12             Answer: "I am an agent of the patient, I  
13      want what's best for the patient, and  
14      especially if the patient couldn't otherwise  
15      afford it, I would wish for my patient to have  
16      it, yes."

17             Did I now read that more correctly,  
18      Dr. Levine?

19             A.     I didn't have an objection to your  
20      original reading. I don't understand the legal  
21      aspects of this.

22             Q.     Fair enough. But from what I just  
23      read, did I read it correctly?

24             A.     You did an excellent job --

25             Q.     Okay.

1           A.     -- I give you an A.

2           Q.     Okay. All right. Are you familiar  
3 with the insurance exclusions that plaintiffs  
4 are challenging in this case, Dr. Levine?

5           A.     Only vaguely.

6           Q.     Okay. So have you reviewed them?  
7 Excuse me. Have you reviewed those exclusions  
8 on paper?

9           A.     I don't think so. I may have.

10          Q.     Perhaps have they been shown to you  
11 in the insurance plan document booklet.

12          A.     I don't think so.

13                   - - - - -

14                   (Thereupon, Deposition Exhibit 4,  
15 1/1/2019-12/31/2019 North Carolina  
16 State Health Plan Benefits Booklet,  
17 Bates Numbers PLAN  
18 DEF0001785-0001900, was marked for  
19 purposes of identification.)

20                   - - - - -

21          Q.     Okay. For the record, I'm  
22 marking -- excuse me. I'm showing Dr. Levine  
23 what has been marked as Exhibit 4, which is the  
24 North Carolina state health plan for teachers  
25 and state employees, a division of the

1 department of state treasurer, 80/20 PPO plan,  
2 benefits booklet, January 1, 2019 to  
3 December 31, 2019. You said you have not seen  
4 this document before, Dr. Levine?

5 A. I now can tell you, I have not seen  
6 this document.

7 Q. Okay. Does it appear to you to in  
8 fact be the benefits booklet for the state  
9 health plan for teachers and state employees  
10 for the year 2019?

11 A. It appears to be so.

12 Q. Okay. If you -- just a moment.  
13 Sorry.

14 Dr. Levine, if you would first turn to  
15 page 42. And the page numbers are at the  
16 bottom of these pages rather than at the top,  
17 if that's of any use to you.

18 And, Dr. Levine, if you would, please,  
19 look, I would say, roughly halfway down the  
20 page, there is a bullet point that begins with,  
21 "Psychological." I know that's somewhat  
22 vague but not --

23 A. I see it --

24 Q. Okay.

25 A. -- "Psychological assessment and

1 psychotherapy treatment in conjunction with  
2 proposed gender transformation."

3 Q. Okay. So that is correct. And  
4 then if you would, please, turn to page 52. In  
5 the T subcategory there, the very last bullet.  
6 It reads, "Treatment or studies leading to or  
7 in connection with sex changes or modifications  
8 and related care." Do you see that there?

9 A. No. Where is it?

10 Q. I'm sorry. Page 52 on the  
11 left-hand side. Do you see letters going down  
12 the left hand column?

13 A. Yes.

14 Q. Look at the letter, "T."

15 A. "T?"

16 Q. "T," as in Tom.

17 A. Yes.

18 Q. And the very last bullet point in  
19 that section.

20 A. Oh, I see it.

21 Q. And then just to confirm I'm  
22 reading it correctly. "Treatment or studies  
23 leading to or in connection with sex changes or  
24 modifications and related care." Did I read  
25 that correctly?

1 A. A.

2 Q. It's very meaningful from a  
3 professor to always have that positive  
4 feedback, so thank you for indulging me.

5 Okay. So are you aware, Dr. Levine, that  
6 these exclusions in the healthcare plan exclude  
7 from coverage any kind of hormonal; that is,  
8 endocrine or surgical care, related to the  
9 treatment of gender dysphoria for adolescents  
10 and adults?

11 MR. KNEPPER: Objection, form.

12 A. I'm becoming aware of that, yes.

13 Q. Do you think such an exclusion is  
14 appropriate, given what you know about  
15 treatments for gender dysphoria?

16 A. Since hormone treatment and  
17 surgical treatment actually represent an  
18 enormous change in body physiology and anatomy,  
19 and the ethical principle that governs  
20 physicians is, above all do no harm, the first  
21 principle, and these tissues and these  
22 functions are normal. They're not diseased.  
23 And the problem with gender dysphoria is a  
24 mental issue about the incongruence between  
25 one's current gender identity and one's bodily

1 anatomy and physiology.

2 And as a result of the fact that these  
3 treatments have been initiated and devised  
4 prior to establishing their impact, their  
5 long-term impact and whether the associated  
6 mental disturbances of the person are improved  
7 by these. I would say that there should at  
8 best be a great hesitance about using these  
9 treatments that are unproven, not FDA approved  
10 and have never been subject to sophisticated  
11 scientific methods of establishing their  
12 efficacy.

13 I understand that insurance companies who  
14 have to pay for events and -- all kinds of  
15 events are hesitant to underwrite and pay for  
16 treatments that are not proven to be  
17 efficacious. I know there's a disagreement  
18 about whether it's efficacious, but in my  
19 field, in the science field, disagreements are  
20 handled by data. And data is generated, not by  
21 simply clinical experience but by randomized  
22 controlled studies or by careful followup  
23 studies with predetermined means of assessing  
24 in follow up the impacts of the treatment.

25 None of these things are true when it

1 comes to the treatment of adolescents with  
2 hormones. And none of these things are  
3 actually true when it comes to the treatment of  
4 adults and adolescents with surgery. So I  
5 think the failure to cover these what is called  
6 erroneously sex change, I think there's a  
7 reasonableness to saying, I don't -- we're not  
8 covering this until you show me the evidence  
9 that it's real, that the impact of the  
10 treatments are very positive and the number of  
11 people who don't have positive is so small that  
12 the good outweighs the bad so to speak, the bad  
13 outcomes are not the predominant outcomes.

14 We don't know the answer to these  
15 questions. And my expertise is not on the  
16 answer to your question, should insurance cover  
17 it, or, do they wish they covered it for my  
18 patients. My expertise has to do with what I  
19 just said, the absence of convincing evidence  
20 after -- when it comes to gender surgery, you  
21 need to understand over fifty years -- these  
22 things have been going on for over fifty years  
23 and they began and they continued without any  
24 controlled follow up, any serious sophisticated  
25 methologic (phonetic) scientific attempts to

1 demonstrate their efficacy. This is the  
2 problem.

3 This is the essence of the problem. This  
4 is, I think the essence of my testimony with  
5 you today. It's not whether I personally as a  
6 doctor would like this patient to have  
7 insurance to cover their hormones. It's about,  
8 is this the right thing to do for this person  
9 and can I help the person see clearly what the  
10 dangers are and what the benefits are. That's  
11 the issue for a doctor, for Stephen Levine as a  
12 doctor. I hope that's a cogent answer --

13 Q. It is --

14 A. -- to your question.

15 Q. -- it is cogent. Thank you.

16 Given all of that, is that -- so you just  
17 explained, testified that there are  
18 complications, some lack of -- and I'm  
19 summarizing here, so I will confirm that this  
20 is an accurate summary of what you just shared,  
21 but I can't possibly repeat all of that. Given  
22 all of those concerns that you have, is that a  
23 reason to deny all medical interventions to  
24 people with gender dysphoria?

25 MR. KNEPPER: Objection, form.



1           A.       No, but that's not -- that's a  
2       separate question about insurance.

3           Q.       Yes, it is a separate question. So  
4       now I'm asking: Are those concerns you raised  
5       justifications in your mind for denying medical  
6       interventions to all people with gender  
7       dysphoria?

8                   MR. KNEPPER: Objection, form.

9           A.       You know, I'm not advocating  
10      denying endocrine treatment or surgical  
11      treatment. I'm just saying that we as a  
12      medical profession need to walk the walk that  
13      we talk. We say as a principle of ethics that  
14      our interventions should be based upon the best  
15      current knowledge, it should be based on  
16      science. It should not be based on politics.  
17      It should not be based on fashion. It should  
18      not be based on civil rights considerations.  
19      They should be based on the kinds of studies  
20      that I just described to you with predetermined  
21      outcome majors that are agreed upon --

22           Q.       Sorry?

23           A.       -- period.

24           Q.       I was --

25           A.       I forgot to put the period.

1           Q.     That's okay. Did you just say,  
2     Dr. Levine, you're not an expert in health  
3     insurance?

4           A.     I am not an expert in health  
5     insurance.

6           Q.     Okay. Or what insurance should or  
7     should not cover?

8           A.     Yes.

9           Q.     Do you recall what the insurance  
10    billing code typically is for psychotherapy for  
11    gender dysphoria? I know it's been a long time  
12    since you've accepted commercial insurance, so  
13    I'm not sure if the billing codes are the same,  
14    but do you recall --

15          A.     The billing code is 90837.

16          Q.     Okay. Is there a code that you're  
17    familiar with that is F64.0?

18          A.     That's not a billing -- that's  
19    diagnostic code --

20          Q.     Thank you.

21          A.     -- there's a separate code for  
22    diagnosis and a separate code for procedure.

23          Q.     I see. So F64.0 is a diagnostic  
24    code?

25          A.     Yes.

1           Q.     And how might you use that  
2     diagnostic code in your practice? I'm sorry.  
3     How might you use that diagnostic code in your  
4     practice?

5           A.     How might I use it?

6           Q.     How do you use it?

7           A.     Well, when a patient who is  
8     struggling with this matter and they qualify  
9     for the diagnosis of gender dysphoria in DSM-5,  
10    I write, "F64.0." If there's some threshold  
11    for that, they have some features but they  
12    don't meet all the criteria, I give them an  
13    F64, point, something else; usually 8. If I  
14    get rejected, as I commonly get rejected from  
15    commercial insurance for that -- you see, I  
16    don't accept commercial insurance, but my  
17    patients use their commercial insurance. Can  
18    you understand that?

19          Q.     I do understand.

20          A.     So what often I have to do -- and  
21    this is one of the great lies and paradoxes  
22    that pervades the medical profession -- is that  
23    we code things, not accurately; that is, we  
24    don't give them an F64, point something  
25    diagnosis, because when we've done that, their

1 insurance company has rejected that. All  
2 right. So we give them another code. Now, you  
3 know, coding, distress or anxiety or depression  
4 or substance abuse or attention deficit  
5 disorder, which they will cover. So there's a  
6 game that all mental -- that all professionals  
7 play. It's this residence between the  
8 insurance company and the doctor and with the  
9 patient in mind, get the person covered. Now,  
10 of course in hospitals, they have special  
11 people who code the encounter to maximize the  
12 reimbursement for the hospital. That's not how  
13 we do it in private practice. We just want --  
14 even if they're my patients and I don't accept  
15 issuance, they're getting paid by their  
16 insurance company directly. I'm not getting  
17 paid, you see?

18 Q. I see.

19 A. So I am interested in their getting  
20 paid something, so I learned how to play the  
21 game. So oftentimes when someone has an F64  
22 diagnosis, I give them two diagnoses, one of  
23 which I know will be covered. But this whole  
24 thing is just junk.

25 Q. Do you think it would be better if

1       that were not an obstacle for mental health  
2       professionals, that mismatched coding problem  
3       that you just described?

4               MR. KNEPPER: Objection, form,  
5       scope.

6               A.       Well, since the medical ethics  
7       principle is that doctors are supposed to be  
8       honest, this compromises our honesty.

9               -   -   -   -   -

10              (Thereupon, Deposition Exhibit 5,  
11       Lesbian Gay Bisexual Transgender  
12       Center Document Entitled,  
13       "Transgender Resources," was marked  
14       for purposes of identification.)

15              -   -   -   -   -

16              Q.       For the record, I'm showing  
17       Dr. Levine what has been marked as Exhibit 5.  
18       It is a printout from Case Western Reserve  
19       University, their website, a page entitled,  
20       "Transgender Resources." Dr. Levine, have you  
21       seen this material before?

22              A.       No.

23              Q.       Okay. It's not very long, so if  
24       you would just take a moment to look at it and  
25       please take as much time as you need.

1           A.     Okay.

2           Q.     Dr. Levine, does this appear to  
3     be -- I'm sorry. Is this a printout from the  
4     Case Western Reserve University web page  
5     entitled, "Transgender Resources"?

6           A.     I have to trust you that it is.

7           Q.     I appreciate that. If you could  
8     turn, please, to the second page. It's just on  
9     the back of the first page, as you might  
10    imagine. And the second bolded section is  
11    titled, "Transgender Health Care Benefits For  
12    Students." Do you see that?

13          A.     Yes.

14          Q.     Okay. And do you see below it  
15    another heading, "Transgender Health Benefits  
16    For Employees"?

17          A.     Yes.

18          Q.     Okay. And were you aware that Case  
19    Western University offers insurance coverage  
20    for gender affirming care, including  
21    psychotherapy, hormones and gender affirming  
22    surgery for students and employees?

23          A.     No.

24                 MR. CHARLES: If we could go off  
25    the record, please.

1 VIDEOGRAPHER: Off the record 11:26.

2 (Recess taken.)

3 VIDEOGRAPHER: On the record 11:31.

4 BY MR. CHARLES:

5 Q. Okay. Dr. Levine, in your report,  
6 you stated that you had not met with any of the  
7 plaintiffs in this case, correct?

8 A. Yes.

9 Q. Okay. And you have not interviewed  
10 any of the plaintiffs in this case, correct?

11 A. Correct.

12 Q. And so you are not offering any  
13 opinions about the plaintiffs in this case,  
14 correct?

15 A. Correct.

16 Q. Okay. And that would include the  
17 veracity of their experiences of gender  
18 dysphoria, correct?

19 A. Yes, correct.

20 Q. And that would not include the  
21 accuracy of their gender dysphoria diagnoses,  
22 correct?

23 A. Correct.

24 Q. Okay. You're not offering any  
25 opinions about their mental health histories?

1 A. Correct.

2 Q. Nor any of the affects of the  
3 gender affirming treatment they may have  
4 received?

5 A. Correct.

6 Q. Okay. Thank you. Let's return to  
7 your report. I don't know if you have that --

8 A. My report?

9 Q. Yes. You can put away that  
10 document in your hand.

11 So if you would, please, turn to page 6  
12 of your report.

13 Okay. So on page 6, paragraph a. at the  
14 bottom of the page there, Dr. Levine. The  
15 report states that this is one of the opinions  
16 you're offering, which is, "Sex as defined by  
17 biology and reproductive function cannot be  
18 changed. While hormonal and surgical  
19 procedures may enable some individuals to  
20 'pass' as the opposite gender during some or  
21 all of their lives, such procedures carry with  
22 them physical, psychological, and social risks,  
23 and no procedures can enable an individual to  
24 perform the reproductive role of the opposite  
25 sex." Did I read that correctly?



1           A.     Yes.

2           Q.     Please say, yes. Sorry. Are those  
3 risks that you mentioned there, Dr. Levine, a  
4 sufficient reason not to give medical care to  
5 someone with gender dysphoria who might need  
6 that medical care?

7           MR. KNEPPER: Objection, form.

8           A.     Those risks are such that they need  
9 to be understood -- explained, understood and  
10 integrated by the person over time so that they  
11 can take personal responsibility for the  
12 consequences, positive and negative, the  
13 benefits and the risks or the negative  
14 consequences that ensue once they undergo these  
15 treatments, period.

16          Q.     Period. Okay. Thank you. When  
17 you provide a letter of authorization or a  
18 letter of support, as you described it earlier,  
19 do you establish those parameters you just  
20 described, that someone I believe, you said  
21 understands --

22          A.     They're knowledgeable about -- may  
23 I speak?

24          Q.     Please.

25          A.     They're aware of their -- they can

1 state that, these are the risks, and they've  
2 had time to personally integrate --

3 Q. Integrate.

4 A. -- think about these risks as they  
5 apply to themselves. "This won't happen to me,  
6 Dr. Levine. I'm too smart for that." That is  
7 not an integration of what I have just said to  
8 them, although I hear that all the time.

9 Q. So would it be correct to say that  
10 before you will provide a letter of  
11 authorization, you are sufficiently satisfied  
12 that a person has understood, integrated those  
13 risks into their ongoing analysis?

14 A. I will say that I have explained  
15 those risks. We have discussed them over time.  
16 And if the person has said repeatedly what I  
17 just quoted, I will put that in my report,  
18 which would help the endocrinologist or the  
19 surgeon understand that he or she is taking  
20 ethical responsibility for delivering this care  
21 and there is some doubt whether the person  
22 really is able to contemplate the risk to him  
23 or her of these dangers.

24 Q. Sorry.

25 A. I forgot to say, period.

1           Q.     I'm learning the cadence of your  
2     speech as we are here today, so I'm trying not  
3     to interrupt you. And in the incident -- or,  
4     sorry. In the circumstance that you have a  
5     patient who doesn't -- that is to say a patient  
6     who does exhibit an understanding of  
7     integration in what you experience or perceive  
8     as a reasoned, thoughtful approach, would you  
9     also put that in your letter to the surgeon or  
10    the endocrinologist?

11          A.     Yes.

12                I want to add, though, that right now as  
13    we're speaking, two patients come to mind that  
14    I've written letters of support to surgeons.  
15    And people said they understood and they were  
16    willing to accept the risks and neither one of  
17    these people actually went through with the  
18    procedure. So, you see, there is a  
19    developmental process. As the opportunity to  
20    actually undergo surgery gets closer, the  
21    apprehension of the patient sometimes leads  
22    them to make a different decision than they did  
23    when they asked me for the letter of  
24    recommendation.

25                I just think we all ought to understand

1       that. Just because someone gets a letter of  
2       recommendation and says, "I accept the risks,"  
3       the process is not complete, you see? Because  
4       what I have seen is people have had surgery and  
5       then they get deeply depressed and so I'm  
6       trying to avoid that.

7               Q.       Understood. And so is the opposite  
8       of those two people then also true in your  
9       experience; that there are people who, you  
10      know, make those statements to you of  
11      understanding and integration, accept the  
12      letter of authorization and then do follow  
13      through with the treatment?

14                   MR. KNEPPER: Objection, form.

15               A.       Yes.

16               Q.       If you would, please, Dr. Levine,  
17      turn to page 12 of your report. Under the  
18      heading, Section 2, "Background in This Field,"  
19      subsection a, "The Biological Baseline of Sex."  
20      Do you see that there?

21               A.       I do.

22               Q.       Okay. It states at paragraph 9  
23      that sex is permanently assigned -- oh, sorry.  
24      Would it be a correct summary to say that your  
25      reports states in that section that sex is

1 permanently assigned on the basis of a person's  
2 DNA at birth in conjunction with their  
3 designated reproductive function as either male  
4 or female?

5 A. No.

6 MR. KNEPPER: Objection, form.

7 Q. Okay. Can you tell me what --

8 A. The word, "Assigned," is put in  
9 quotes.

10 Q. Oh, I see, in quotations. What is  
11 the word you would use instead of, "Assigned"?

12 A. Sex is determined at conception.

13 Q. And is it in conjunction with  
14 chromosomes, in your opinion?

15 A. It's in conjunction with strictly  
16 biologic processes. Hormones are just -- I'm  
17 sorry. Chromosomes are the carriers for genes  
18 and the sequence of gene interaction is nothing  
19 short of miraculous and not completely  
20 understood. But what is understood is the sex  
21 as male or female of the new form of life is  
22 determined at conception. And that's why I use  
23 the word, "Assigned." We're not assigning it.  
24 We're determining. We're discovering it.

25 Q. So is it just the chromosomes then

1           that --

2           A.       No.

3           Q.       -- that determine --

4           A.       I'm sorry.

5           Q.       I'm sorry. That we -- I forget the  
6 word you just used -- discover, I think is the  
7 word.

8           A.       Determined.

9           Q.       Okay. So is it just chromosomes  
10 then that determine sex or is it other -- are  
11 there other components involved?

12          A.       There are other components.

13          Q.       And what are some of those?

14          A.       Genes and the sequence of genes  
15 turning on their function and turning off their  
16 function. And those genes determine the  
17 dimorphic that is two forms, either one form or  
18 another, that which will be recognized as  
19 either a male fetus or a female fetus. And  
20 that, you know, in case of conceptions that  
21 lead to death and that the earliest embryos are  
22 histologically examined, the sex of that, you  
23 know, aborted embryo is determinable.

24          Q.       So beyond that, are there any other  
25 components that you would identify as part of

1 sex, as you understand it?

2 A. Well, the miracle of development in  
3 nine months gestation has numerous -- I mean,  
4 enumerable forces, endocrine forces, pathways  
5 of the lines that the cells follow in their  
6 growth pattern, the -- you know, when 96  
7 percent of newborns appear in the world and are  
8 declared by the pediatrician to be entirely  
9 healthy, there probably have been several  
10 million episodes, several million operations  
11 that have worked perfectly. So chromosomes are  
12 the carriers of the genetic information that  
13 creates the miracle of development and actually  
14 the course of life.

15 Q. Forgive me for moving past the very  
16 poetic description you just provided, which I  
17 do appreciate.

18 A. I'm sorry. Was what?

19 Q. Forgive me for moving past the very  
20 poetic description that you just provided.

21 A. Oh.

22 Q. No, no. I mean that sincerely.  
23 But I guess my question is: When the infant is  
24 determined to be healthy and alive, right, what  
25 are the other components of the sex of that

1 infant as opposed -- so I understand the DNA  
2 and the chromosomes piece.

3 A. I mean, obviously you don't have to  
4 be a physician to look at the genitalia of a  
5 newborn and say, This is male or female, or, I  
6 don't know what this is.

7 Q. So it would then be for you the  
8 chromosomes, the pathways of the cells and the  
9 external genitalia?

10 A. Yes.

11 MR. KNEPPER: Objection, form.

12 Q. Okay. Would you agree there are  
13 some scholars who define, "Sex," differently  
14 than the way you just described it?

15 A. I don't know that I would call  
16 them, "Scholars," but there are people in this  
17 field who probably define it differently,  
18 although I couldn't tell you how.

19 Q. Are there people with your same  
20 level of credential -- Ph.D.'s in psychiatry,  
21 M.D.'s in psychiatry -- who describe, "Sex,"  
22 differently?

23 A. I think the difference is whether,  
24 "Sex," is construed as including gender. And  
25 in what one considers primary, basic,



1        unchangeable about a person. You know, the  
2        layperson doesn't distinguish clearly on their  
3        own between sex and gender. And even the  
4        medical profession didn't have a concept of  
5        gender until relatively recently. So it  
6        wouldn't surprise me that there are some people  
7        who are more or less knowledgeable about these  
8        things, even though they have PhD degrees or MD  
9        degrees. I mean, having an MD or a PhD degree  
10       does not mean that you are a rationale and  
11       scientific individual. It just means you've  
12       passed certain academic credentials and you got  
13       degreed --

14                Q.       All right.

15                A.       -- it seems rather basic to me that  
16       all fields that have biologic -- all fields  
17       that have a biologic understanding would agree  
18       with my concept of, "Sex."

19                        MR. CHARLES: We'll stop there for  
20       the phone call. Thanks, Dr. Levine.

21                        MR. KNEPPER: Okay.

22                        MR. CHARLES: Off the record.

23                        VIDEOGRAPHER: Off the record 11:47.

24                                (Recess taken.)

25                        VIDEOGRAPHER: On the record 12:47.

1 BY MR. CHARLES:

2 Q. So, Dr. Levine, in your report, you  
3 discuss your involvement with WPATH until 2002.  
4 It also states you were the chairman of the  
5 committee for the drafting of the standards of  
6 care 5 and then you decided to not be a member  
7 any longer. Is that correct?

8 A. Yes.

9 Q. Okay. And do you continue in your  
10 current practice to follow the WPATH standards  
11 of care?

12 A. More or less. Mostly less.

13 Q. And less in the sense that you  
14 follow them, but do you use a more conservative  
15 approach?

16 MR. KNEPPER: Objection, form.

17 A. The standards of care were last  
18 issued as the 7th edition. And in the 7th  
19 edition, they no longer think a mental health  
20 professional is necessary prior to medical  
21 treatment; and they are necessary only to make  
22 a diagnosis of gender dysphoria, which does not  
23 take a sophisticated human being, a  
24 sophisticated clinician. And so that changed  
25 everything in the field whereby people whose

1 current gender identity was trans could much  
2 more easily have access to endocrine treatment.

3 And so what I do with patients and what  
4 our clinic has done with patients is not follow  
5 that standard of care. We do believe in a  
6 thorough psychiatric evaluation. And when it  
7 comes to adolescents, we believe in talking to  
8 the parents and getting a developmental history  
9 beginning sometimes before pregnancy. So in  
10 that sense, I don't follow the standards of  
11 care.

12 Q. The version 7 that you mentioned of  
13 the standards of care, does that version still  
14 incorporate much of the language that you wrote  
15 from previous versions?

16 A. Certain paragraphs are my -- well,  
17 my -- if I can refer to the 5th edition as,  
18 "Our," or, "My standards of care," meaning that  
19 I was the chairman of that writing group. And  
20 I actually wrote most of the words in  
21 that 21-page document, but more or less the  
22 current standards of care are over 120 pages.  
23 And so certainly I can identify a paragraph or  
24 two that I think I wrote, but most of it is not  
25 my writing.

1 Q. Okay. And did you ask to be  
2 involved in the writing of the standards of  
3 care version 8 which is still forthcoming?

4 A. Did I ask to be involved, no.

5 Q. So at no point did you try to be  
6 involved in the drafting of the standards of  
7 care version 8?

8 MR. KNEPPER: Objection, form.

9 A. No. I might add, I wasn't invited.

10 - - - - -

11 (Thereupon, Deposition Exhibit 6,  
12 4/8/2019 Soneeya v. Turco Trial  
13 Transcript, Day 1, was marked for  
14 purposes of identification.)

15 - - - - -

16 Q. So for the record, I'm showing  
17 Dr. Levine what has been marked as Exhibit 6,  
18 which is the transcript of the bench trial, day  
19 one, Soneeya, S-o-n-e-e-y-a, versus Turco from  
20 April 8, 2019. Dr. Levine, if you could,  
21 please turn to page 1-90.

22 Beginning at line 10, Question --

23 A. I'm sorry. Did you say, "190"?

24 Q. Yes, correct. In the upper  
25 right-hand corner 1-90.

1           A.       Yeah.

2           Q.       And then looking at line 10, I'll  
3 begin the question: "And as you understand it,  
4 there's going to be an eighth version coming  
5 out soon, correct?"

6           Answer. "Yes."

7           Question: "And you're not involved in  
8 drafting that version, correct?"

9           Answer: "I am not."

10          "And you requested to be participate in  
11 drafting that version, correct?"

12          Answer: "I'm not sure that's correct."

13          A.       Excuse me, but --

14          Q.       Just one second.

15          A.       -- what you're reading is not --

16          Q.       Dr. Levine, please just let me  
17 finish and then I'll ask you a question.

18          Answer: "I'm not sure that's correct."

19          Question: "You did not ask to be  
20 involved in drafting that version?"

21          Answer: "I think -- I think I actually  
22 might have, now that you bring it up, but I was  
23 told I had to be a member of WPATH."

24          Did I read that correctly?

25          A.       It's not where you -- this is

1 not what -- when I interrupted you, I wanted to  
2 tell you that what you're reading is not on  
3 line 10 of page 190, so I didn't -- I was just,  
4 you know, confused.

5 Q. Okay.

6 MR. KNEPPER: I think the change  
7 here is 1-90 and I think the witness might be  
8 on page 190.

9 MR. CHARLES: My apologies.

10 MR. KNEPPER: Unfortunately, this  
11 transcript actually goes that high, so.

12 Q. My apologies, Dr. Levine. So it  
13 would be 1-90.

14 A. Oh, I'm sorry. Okay. So line 10?

15 Q. Yes, line 10.

16 Question: "And as you understand it,  
17 there's going to be an eighth version coming  
18 out soon, correct?"

19 Answer. "Yes."

20 Question: "And you're not involved in  
21 drafting that version, correct?"

22 Answer: "I am not."

23 Question: "And you requested to  
24 participate in drafting that version, correct  
25 ?"

1 Answer: "I'm not sure that's correct."

2 Question: "You did not ask to be  
3 involved in drafting that version?"

4 Answer: "I think -- I think I actually  
5 might have, now that you bring it up, but I was  
6 told I had to be a member of WPATH."

7 Now did I read that correctly?

8 A. Yes.

9 Q. Okay. My apologies for the mixup  
10 on the page numbers.

11 Okay. And then, Dr. Levine, if you  
12 could, please, turn to 1-100.

13 A. I'm there.

14 Q. Okay. And then -- sorry. Give me  
15 just a second here.

16 Okay. Sorry about that. Beginning at  
17 line 13 on that page, Dr. Levine.

18 "The Court: I'm less interested in what  
19 the court found on that than I am the  
20 substantive question.

21 Does he -- well, do you subscribe to the  
22 WPATH standard of care?

23 The Witness: I subscribe to it as  
24 guidelines. I subscribe to it in many ways,  
25 but there are subtle objections that I have to

1       it, and --

2               The Court: Would it be fair to say those  
3       are refinements of the Standards of Care as  
4       they exist now?

5               Yes."

6               Did I read that correctly as well,  
7       Dr. Levine?

8               A.       Yes.

9               Q.       Okay. And the standards of care is  
10       still published in a peer-reviewed source,  
11       right?

12              A.       The standards of care are developed  
13       by consensus agreement in a committee of people  
14       who are all involved in the transgender  
15       healthcare system. If it is sent to a journal,  
16       like The International Journal of  
17       Transgenderism, all of the people who are on  
18       that committee of the journal are actively  
19       involved in transgender care. The standards  
20       for guidelines on various medical treatments  
21       say that 30 percent maximum of people involved  
22       in writing guidelines need to be -- need to be  
23       members of that specialty or that activity.

24              So 70 percent need to be, you know,  
25       people interested in science and educated in



1 methodology and are capable of critically  
2 reviewing the literature. So your statement is  
3 true on the most superficial level, but is  
4 totally incorrect when it comes to scientific  
5 standards of care for issuing guidelines for  
6 the medical profession. So I don't know how to  
7 answer the question. On the surface, the  
8 answer is, yes. And underneath the surface,  
9 the answer is, no.

10 Q. So the International Journal For  
11 Transgender Health is still a peer-reviewed  
12 source, though, right?

13 A. It's peer reviewed by people who  
14 make their living supporting transgender care.

15 Q. But it's still peer reviewed,  
16 right?

17 A. It's peer reviewed --

18 Q. And as for your --

19 A. -- I think it's peer reviewed.

20 Q. Okay. Understood. And as for your  
21 more conservative approach, can you cite to any  
22 studies or research that resulted in better  
23 outcomes than people who adhere strictly to the  
24 WPATH standards of care version 7?

25 A. No. This is part of the problem in

1 the field for -- although there are alternative  
2 approaches, there's no randomized controlled  
3 study of any approach, including those which  
4 the standards of care seem to endorse. But the  
5 alternative approaches are equally deficient  
6 scientifically and are just like many people  
7 who are advocates are based on anecdotal  
8 evidence.

9 Q. Sorry. I missed the last part of  
10 that. You said your approach as well is not --  
11 has no controlled studies or support in that  
12 way?

13 MR. KNEPPER: Objection, form.

14 A. Not only does it have no controlled  
15 studies, it has no systematic follow up based  
16 upon prior agreements about how we're going to  
17 evaluate those things.

18 Q. Excuse me. So then given that  
19 there are not peer reviewed -- I'm sorry.  
20 Given that there are not studies or data to  
21 support either approach, how are you and SEGM  
22 developing treatment protocols then?

23 MR. KNEPPER: Objection, form.

24 A. We begun first by reviewing the  
25 scientific support for WPATH recommendations.

1 We reviewed -- we are in the process and  
2 continue to look for evidence that supports the  
3 efficacy of hormonal treatment and surgical  
4 treatments. And it's not just SEGM, but  
5 there's a growing community in the last three  
6 years of scientists who have looked at and  
7 questioned the outcomes of these studies; and  
8 recognizing the colossal degree of uncertainty  
9 after fifty years of these treatments about  
10 whether they're efficacious or not and how many  
11 people are harmed and what are the consequences  
12 to the trans community in terms of public  
13 health measures.

14 So given this skepticism, given the  
15 uncertainty and given the worrisome signs in  
16 the trans community, the vulnerable,  
17 marginalized population, we're looking to see,  
18 is there another approach. And the prudent  
19 approach for every other psychological  
20 condition is a psychotherapeutic beginning to  
21 look at what is the problem, what are the  
22 apparent sources of the problem and what are  
23 the apparent solutions.

24 So although there's no peer-reviewed  
25 controlled studies of an extended psychiatric

1 evaluation leading to a therapeutic process, it  
2 seems prudent, given the fact that we are  
3 changing people's bodies, especially teenagers'  
4 bodies, and they are not of developmental  
5 sophistication yet that court systems or at  
6 least one court system thinks they're certainly  
7 too young to make these life-altering  
8 decisions. So people in SEGM are biased in the  
9 direction of being conservative and providing  
10 psychotherapeutic evaluations of the child, of  
11 the teenager and of their parents, of their  
12 family systems to see if we can find a way to  
13 help them be informed about what is going --  
14 what they think they want to do in their  
15 future.

16 Q. And so when you provide letters of  
17 authorization for hormones or for surgery, do  
18 you do so in accordance with the WPATH  
19 standards of care?

20 A. Yes. That is the standard, to  
21 provide a letter of recommendation.

22 Q. Okay. So turning back to your  
23 report, Dr. Levine. You can go ahead and put  
24 away the trial transcript there.

25 A. I'm sorry. Did you say, "Turning

1 back to my report"?

2 Q. Yes, sir. And turning to page 16  
3 and then looking at the middle of the page,  
4 paragraph 15.

5 A. Yes.

6 Q. It begins with, "To avoid the  
7 methodological error of confirmation bias,  
8 clinicians and researchers generate and test  
9 alternative hypotheses. It is currently  
10 unclear how many new gender discordant patients  
11 have been influenced by social contagion  
12 processes." Did I read that correctly?

13 A. You continue to get an A.

14 Q. All right. Is a, "Hypothesis," an  
15 unconfirmed theory about why something is the  
16 way it is?

17 A. A, "Hypothesis," is a synthesis of  
18 information that is not confirmed or has not  
19 been repeatedly confirmed to the point that it  
20 would be considered a fact, a trustworthy fact.

21 Q. Has a hypothesis been confirmed at  
22 all?

23 MR. KNEPPER: Objection.

24 A. Well, if it's a hypothesis, it's  
25 not confirmed.

1           Q.     Okay. So is a, "Hypothesis," an  
2     idea about why something happens, but doesn't  
3     provide evidence for why something is  
4     happening?

5           MR. KNEPPER: Objection, form.

6           A.     A, "Hypothesis," generates the  
7     pursuit of evidence.

8           Q.     Has social contagion as an  
9     explanation for increased cases of gender  
10    dysphoria been scientifically proven yet?

11          A.     No. But when you seek -- when you  
12    see -- actually see patients and talk to them  
13    about their friends and hear about the  
14    influence of the Internet and the gurus on the  
15    Internet who tell 13 and 12-year-old children  
16    who are concerned about menses or concerned  
17    about breast development or concerned about  
18    their bodies changing and then they're told  
19    that they're transsexual by somebody that  
20    they've never met that they talked to on the  
21    Internet, that would be social contagion or  
22    social education.

23          Or when you hear about a friend who  
24    declares themselves trans and then your patient  
25    six months later declares themselves trans, you

1 wonder about the -- the interpersonal,  
2 psychological link between best friends in  
3 young puberty, young years of puberty and how  
4 one can identify with one's friends and that  
5 would be a social contagion. Those are 3the  
6 kinds of ideas that people like me get when we  
7 sit with people week after week talking about  
8 their lives. You see, that's not science.

9 But that is clinician and this is the  
10 kind of thing that leads to intuition, clinical  
11 intuition and that's the source of the  
12 generation of the hypothesis. But we think as  
13 clinicians, when we hear -- I mean, I don't  
14 think I've ever seen a teenager trans person  
15 who hasn't been heavily involved and influenced  
16 by the Internet, for example, but I have not  
17 done studies to document that in a way that  
18 would be scientifically acceptable. There are  
19 other people who have.

20 And I doubt very much if you'll ever find  
21 a clinician on any side of this issue, you see,  
22 who would say, oh, no most of my patients have  
23 never talked to anyone on the Internet about  
24 transgender. The Internet is just part of life  
25 today and -- but transgender teenagers spend

1 hours and hours of their time getting counseled  
2 or participating with the virtual trans  
3 community. That's a hypothesis.

4 Q. So no scientific citation?

5 A. When we use the word, "Scientific,"  
6 in the best sense, yes, the answer to your  
7 question is, no scientific.

8 Q. Okay. No studies of citations you  
9 can point to today to support that hypothesis?

10 A. Oh, I think Lisa Littman's studies  
11 are in the literature and/or in press that  
12 documents this.

13 - - - - -

14 (Thereupon, Deposition Exhibit 7,  
15 "Correction: Parent reports of  
16 adolescents and young adults  
17 perceived to show signs of a rapid  
18 onset of gender dysphoria," Article,  
19 was marked for purposes of  
20 identification.)

21 - - - - -

22 Q. Okay. For the record, please note  
23 I'm showing to Dr. Levine what has been marked  
24 as Exhibit 7. "Correction: Parent reports of  
25 adolescents and young adults perceived to show



1 signs of a rapid onset of gender dysphoria," by  
2 Lisa Littman published March 19, 2019. Have  
3 you seen this material before, Dr. Levine?

4 A. I've seen of it. I don't think  
5 I've read it.

6 Q. Okay. Were you aware that the Lisa  
7 Littman article had to be withdrawn, corrected  
8 and republished?

9 A. Yes.

10 Q. Okay. And were you aware that the  
11 initial article was based on a survey of  
12 parents --

13 A. Yes.

14 Q. -- of purportedly transgender  
15 children and the parents were recorded -- I'm  
16 sorry. Let me start over. Were you aware that  
17 the Littman article was based on a survey of  
18 parents who were recruited through some parent  
19 groups?

20 MR. KNEPPER: Objection, form.

21 A. I knew it was a survey of parents.

22 Q. Okay. And did you know there were  
23 no report-outs from the young adults of those  
24 parents in the article?

25 A. It was a report of parents'

1 observations.

2 Q. Right. Not of the children  
3 themselves?

4 A. Yes.

5 Q. Okay. And were you aware that the  
6 Littman article recruited its subjects from  
7 websites that expressed cautious to negative  
8 views about medical and surgical interventions  
9 for gender dysphoric adolescents and young  
10 adults?

11 MR. KNEPPER: Objection, form.

12 A. The answer to your question is, no.

13 Q. Do you believe that this is a  
14 circumstance in which a descriptive study may  
15 be infected by confirmation bias?

16 MR. KNEPPER: Objection, form.

17 A. I've never met parents who were not  
18 concerned about their trans identity. Some  
19 more sophisticated and educated parents have  
20 bound together --

21 Q. I'm sorry. Dr. Levine, that's not  
22 my question.

23 A. I know. I'm just giving you  
24 background for the answer to your question.

25 Q. Okay.

1           A.     Maybe you could repeat your  
2 question.

3           Q.     Sure. Do you believe that this is  
4 a circumstance in which a descriptive study may  
5 be infected by confirmation bias?

6           MR. KNEPPER: Objection, form.

7           A.     You mean, Lisa Littman's  
8 confirmation bias? Whose confirmation bias are  
9 you referring to? The parent's confirmation  
10 bias?

11          Q.     Correct.

12          A.     Well, the parents are not -- the  
13 parents, they're not scientific. They're  
14 telling you their concerns --

15          Q.     Sure. Let me rephrase.

16          A.     -- and observations. I don't think  
17 the question makes any sense.

18          Q.     Okay. So do you believe this is a  
19 circumstance in which a descriptive study may  
20 be infected by the confirmation bias of the  
21 author?

22          MR. KNEPPER: Objection, form.

23          A.     No.

24          Q.     Okay. So I'm going to read  
25 beginning with the section that is entitled --

1       so it's slightly -- I apologize the text is so  
2       small on this reprint, but the section I'm  
3       going to be reading from starts with, "Emphasis  
4       that this is a study of parental observations."  
5       It's on the first page. Sorry.

6               A.       Yes.

7               Q.       Okay. "This study of parent  
8       observations and interpretations serves to  
9       develop the hypotheses that rapid-onset gender  
10      dysphoria is a phenomenon and that social  
11      influences, parent-child conflict, and  
12      maladaptive coping mechanisms may be  
13      contributing factors for some individuals.  
14      Rapid-onset gender dysphoria...is not a formal  
15      mental health diagnosis at this time. This  
16      report did not collect data from the  
17      adolescents and young adults...or clinicians  
18      and therefore does not validate the phenomenon.  
19      Additional research that includes AYAs, along  
20      with consensus among experts in the field, will  
21      be needed to determine if what is described  
22      here as rapid-onset gender dysphoria...will  
23      become a formal diagnosis. Furthermore, the  
24      use of the term, rapid-onset gender dysphoria,  
25      should be used cautiously by clinicians and

1 parents to describe youth who appear to fall  
2 into this category. The term should not be  
3 used in a way to imply that it explains the  
4 experiences of all gender dysphoric youth nor  
5 should it be used to stigmatized vulnerable  
6 individuals. This article has been revised to  
7 better reflect that these parent reports  
8 provide information that can be used to develop  
9 hypotheses about factors that may contribute to  
10 the onset and/or expression of gender dysphoria  
11 among this demographic group." Let me pause  
12 there. Did I read that section correctly?

13 A. Yes.

14 Q. Thank you. Okay. The next section  
15 beginning with, "Because this is a study of  
16 parent reports."

17 "Because this is a study of parent  
18 reports, there is some information about the  
19 AYAs that the parents would not have access to  
20 and the answers might reflect parent  
21 perspectives. Examples where parent answers  
22 reflect their perspectives of the AYA include  
23 answers concerning the child's mental  
24 well-being, the parent-child relationship, and  
25 whether the child has high expectations about

1       transitioning. However, it is...important to  
2       note that there are other survey items where  
3       the parent would have direct access to  
4       information about their child and that those  
5       answers reflect items that can be directly  
6       observed." Did I read that correctly?

7             A.       Yes, you did.

8             Q.       All right. Your report also cites  
9       as support for the social contagion hypothesis  
10       to an article from Medscape.com written by  
11       Becky McCall and Lisa Nainggolan as support for  
12       the social contagion theory. Is that correct?  
13       I'm sorry. It's not going to be on this  
14       article, Doctor.

15            A.       I don't know that article.

16            Q.       Okay.

17            A.       You haven't asked me a question  
18       about this. Did I misunderstand something?

19            Q.       No, no. Sorry. We're just --

20            A.       You haven't asked my opinions about  
21       that, yeah.

22                   - - - - -

23                   (Thereupon, Deposition Exhibit 8,  
24                   "Transgender Teens: Is the Tide  
25                   Starting To Turn?" Article, was

1 marked for purposes of  
2 identification.)

3 - - - - -

4 Q. Yeah. So, for the record, I'm  
5 showing Dr. Levine what has been marked as  
6 Exhibit 8. "Transgender Teens: Is the Tide  
7 Starting To Turn?" by Becky McCall and Lisa  
8 Nainggolan, April 26, 2021. Dr. Levine, you  
9 said you have not reviewed this article before?

10 A. Which one are you referring to?

11 Q. I'm sorry. That one to your left.

12 A. This?

13 Q. Yes. Take your time.

14 A. Have I reviewed it, no. You know,  
15 I've seen the picture of Keira Bell. I've seen  
16 news reports of this in the past, but they were  
17 just news reports, yeah.

18 Q. Do you know if either of the  
19 authors of this article is a scientist?

20 A. I have no idea.

21 Q. Okay. Or a psychiatrist?

22 A. (Indicating.)

23 Q. I'm sorry. Could you make your  
24 responses verbal? I'm forgetting.

25 A. I have no idea.

1           Q.     Okay. Thank you. Have either of  
2           them ever treated transgender children or  
3           adolescents?

4           A.     I would have no idea.

5           Q.     Okay. To your knowledge, is the  
6           information provided on Medscape.CA subject to  
7           peer review?

8           A.     I don't know how Medscape works.  
9           I've heard there have been retractions, but I  
10          don't know how their peer reviewed is made.  
11          Perhaps people write in that, This is  
12          ridiculous what you've been teaching or what  
13          you've been saying, but whether they're peer  
14          reviewed or not, I have no idea.

15          Q.     So you probably -- I'm sorry. So  
16          do you know if this article has been published  
17          in a peer-reviewed journal to your knowledge?

18          A.     "Transgender teens: Is the  
19          Tides" -- that article?

20          Q.     Yes.

21          A.     I don't know. I don't know this  
22          article. I don't know where it's from.

23          Q.     Okay. So your report includes a  
24          quotation from this article. "The vast  
25          majority of youth now presenting with gender



1 dysphoria are adolescents who suddenly express  
2 revulsion with their sex from birth and 70% of  
3 them were born female. Many of them have  
4 comorbidities such as anxiety, attention  
5 deficit hyperactive disorder, autism spectrum  
6 traits, and depression, Malone explains, which  
7 need to be considered."

8 A. I quoted this article --

9 Q. Yes.

10 A. -- verbatim --

11 Q. Yes. I need --

12 A. -- as opposed to vice-versa?

13 Q. I need to find --

14 MR. KNEPPER: Page 18 --

15 Q. Page 18.

16 MR. KNEPPER: -- in your report  
17 there's a sentence in there that says, "See  
18 also."

19 Q. Yeah. It's about a quarter of the  
20 way down the page.

21 A. Oh, I see --

22 Q. Okay.

23 A. -- I see. So I must have read this  
24 report. I have a picture and I have a  
25 collection of articles and there's a picture --

1       this picture is in it, but I don't recognize  
2       the rest of it just by memory, yeah.

3               Q.       Okay. So for that statistic,  
4       Dr. Levine, that's quoted there in your report  
5       on page 18, the corresponding quotation in the  
6       article is on page 2, if you could turn to  
7       that. So it's this article on page 2 at --  
8       it's the third paragraph from the bottom.

9               A.       Yes. Okay.

10              Q.       So the quote is there. And it  
11       says, as I read, "The vast majority of youth  
12       now presenting with gender dysphoria are  
13       adolescents...)," and it ends with, "Malone  
14       explains, which need to be considered." Do you  
15       see a citation after that for that --

16              A.       For, "Malone explains"?

17              Q.       Yes.

18              A.       Yeah.

19              Q.       Do you see any citation for that  
20       statistic?

21              A.       In the article?

22              Q.       In the article and also in your  
23       report.

24              A.       I presume there is no citation, if  
25       you asked me that question.

1           Q.     Okay. So do you know what evidence  
2     the person quoted in the article is relying on  
3     to make that assertion?

4           A.     No, but it's totally in continent  
5     with my clinical experience and the clinical  
6     experience of colleagues.

7           Q.     Okay. But you don't know of a  
8     citation or study that is being cited for that  
9     assertion?

10          A.     Oh, no. The -- there have been a  
11     number of studies that have demonstrated that,  
12     including from the (inaudible) clinic itself.  
13     And I just read one. The Griffin study also  
14     has data about that. I mean, there's hardly a  
15     recent publication that has a section on  
16     epidemiology that doesn't emphasize the  
17     preponderance of adolescent girls presenting as  
18     trans boys; and the fact that by parental  
19     report they did not show any evidence of  
20     cross-gender identification prior to puberty;  
21     and that the children themselves haven't been  
22     somehow potentially coached on what to say  
23     about how long they've been uncomfortable about  
24     their gender identity. This is not, you know,  
25     speculation alone. This is such a broad

1 multi-continental set of observations from  
2 Europe, from Australia, from North America --

3 Q. Okay.

4 A. -- it almost doesn't even need  
5 citations it's so clinically apparent.

6 Q. Okay. But there's no citation in  
7 your report?

8 A. In my report, yes.

9 Q. Okay. So on page 18, going back to  
10 your report, at the bottom of page 18, you use  
11 a term, "Transgender Treatment Industry." Is  
12 this the first time you have used this term?

13 A. In this report?

14 Q. No.

15 A. You mean, did I ever use it in  
16 another report?

17 Q. Yeah, yeah.

18 A. I'm not sure. If this is -- if  
19 it's not the first, it might be the second.

20 Q. And where did the term originate?

21 A. I think it -- the term originated  
22 from Dwight Eisenhower at the end of his --  
23 when he was leaving the presidency in 1952, he  
24 warned the people about the military industrial  
25 complex and that there was a very comfortable

1 two-way door between the military and the  
2 people who made military equipment. And that  
3 we in America needed to watch out for policy  
4 that is based upon the mutual interactions of  
5 those two industries.

6 And since I -- since I was just a child  
7 when that happened, but it's been in my mind  
8 ever since I became a professional wondering  
9 how medicine works and how the relationship  
10 between doctors themselves and the  
11 pharmaceutical industry and the makers of  
12 medical equipment like EKG machines and so  
13 forth, what is their relationship and does it  
14 have possible -- any way of distorting what we  
15 do as doctors.

16 So the idea that, for example, a hundred  
17 percent of people who wrote the standards of  
18 care are involved in transgender work and the  
19 financial support for WPATH comes from grants  
20 that are pro transsexual and who believe in  
21 these treatments are life saving and enhance  
22 people's lives, it's sort of like -- I don't --  
23 I don't know how to say the transgender  
24 pharmaceutical -- I don't know how to -- I  
25 don't know how to find words for that, but you

1       see I've been very, very aware for a number of  
2       years that WPATH has sent out educators to the  
3       field to influence mental health professionals  
4       and pediatricians and various physicians  
5       promulgating what they call, competent care.

6               And, "Competent care," means care based  
7       on the principles that they have asserted  
8       without factual basis, only on clinical basis.  
9       And all the people who are recommending these  
10      treatments who have disregarded or put the  
11      treatments ahead of the scientific  
12      establishment of their efficacy, to me it's  
13      reminiscent of what Eisenhower said. And this,  
14      you know, I don't -- there are problems with  
15      this term. I'm just trying to say that between  
16      the surgeons, the endocrinologists, certain  
17      pediatricians now and various master prepared  
18      in Ph.D., prepared in MD, prepared mental  
19      health professionals who have been educated to  
20      believe that this is what science has dictated.

21             There is a treatment industry -- it's not  
22      a behind the scenes, let's have a scheme -- it  
23      just has come together as a force within  
24      medicine that has put the cart before the  
25      horse. The horse is science establishing by

1 the methods we made reference to before, the  
2 efficacy of the treatment and the downsides of  
3 the treatment. But because WPATH is an  
4 advocacy organization and the scientific  
5 establishment of the efficacy of their  
6 treatments are not important to them, what they  
7 are doing is teaching young mental health  
8 professionals and medical professionals as a  
9 whole what their ideology is. They say it's  
10 scientifically established.

11 I'm here to tell you to the extent that I  
12 understand science, it is not scientifically  
13 established. In a sense, there is an industry  
14 that has different elements that feed each  
15 other; that's the transgender treatment  
16 industry. I think if we put our heads  
17 together, we could find another term.

18 Q. So did you coin that phrase then?

19 A. No --

20 Q. Okay.

21 A. -- no.

22 Q. Have you seen it used before in any  
23 peer-reviewed articles?

24 A. Not in a peer-reviewed article.  
25 I've seen it used in these kind of expert

1 opinion -- (Indicating.)

2 Q. Okay.

3 A. -- I would -- you know, if I had  
4 time and I had a committee of people, I -- I  
5 would probably find a different term for it.  
6 But I don't mean it in a disparaging way. I  
7 mean that this is a group of compassionate  
8 people trying to help other people who actually  
9 believe that the science has established the  
10 best practices when in fact they're not well  
11 informed.

12 Q. Do you need a sip of water after  
13 that?

14 A. No. I'm just a long-winded guy.

15 I want to add, if I may, that we should  
16 make a distinction between education and  
17 indoctrination. Education can be based on  
18 science. Indoctrination is based on preferred  
19 beliefs that, if you allow me to use this term  
20 again. The transgender treatment industry is  
21 heavy on indoctrination and has declared, if  
22 you look at the standards of care, if you don't  
23 believe these systems, you're not a  
24 competent -- you're not competent to take care  
25 of people. That of course is the height of



1       nonscientific reasoning.

2               Q.       So your report on page 20 -- or,  
3       I'm sorry. If you would, please, turn in your  
4       report to page 20, paragraph 18 beginning  
5       with -- I'm sorry. Your report discusses in  
6       that paragraph, paragraph 18, that, "In  
7       complex, experimental, and little understood  
8       fields," it is common to explore alternative  
9       hypotheses to alleviate the suffering of  
10      patients. And that, "One such alternative is  
11      to teach coping and resilience...to gender  
12      discordant children."

13              Are there any children or adolescent  
14      patients that you have individually had or that  
15      you've supervised clinicians as having whose  
16      gender dysphoria was not sufficiently addressed  
17      by teaching coping and resilience?

18              MR. KNEPPER: Objection, form.

19              Q.       I can rephrase.

20              A.       Can you simplify that question for  
21      me?

22              Q.       So have you had -- let's start with  
23      you individually. Have you individually, as a  
24      clinician, had children or adolescent patients  
25      whose experiences symptoms of gender dysphoria

1 was not cured by teaching coping and resilience  
2 skills to them?

3 MR. KNEPPER: Objection, form.

4 A. The word, "Cure," is a problem for  
5 me.

6 Q. Let me rephrase. So have there  
7 been any children or adolescent patients whose  
8 gender dysphoria was not sufficiently  
9 addressed? So not cured but it persisted  
10 beyond teaching those resilience and coping  
11 skills.

12 MR. KNEPPER: Objection, form.

13 A. I don't know what's going on, but I  
14 don't understand your question --

15 Q. Okay --

16 A. It's --

17 Q. -- let me back up a little bit. So  
18 if you look at paragraph 18, I'll just read the  
19 first couple of sentences there. "In a  
20 complex, experimental, and little understood  
21 field such as transgender medicine, generating  
22 and exploring alternative hypotheses is  
23 essential to our efforts to help alleviate the  
24 tragic suffering of our patients. One such  
25 alternative is to teach coping and resilience

1 skills to gender discordant children."

2 Do you understand your reference there  
3 to, "Alternative is to teach coping and  
4 resilience skills"?

5 A. We-- we don't have to specify  
6 dysphoric children. We could just use the  
7 word, "Children." Children including dysphoric  
8 children often come from family systems --

9 Q. But I'm not asking about all  
10 children, Dr. Levine. I'm just asking about  
11 children with gender dysphoria.

12 A. Yeah, now, are you asking if I've  
13 taught coping and resilience skills to gender  
14 dysphoric children and they didn't get better?  
15 Is that what you're asking?

16 Q. Yes. Where their gender dysphoria  
17 persisted.

18 A. Oh, yes, yes, yes. See, by the  
19 time a teenager, for example, establishes a  
20 current identity as a trans person, it's a very  
21 tenacious identity, like all aspects of  
22 identity are pretty tenacious. What we're  
23 trying to do is to teach them, not about their  
24 gender identity but try to teach them about the  
25 forces that are shaping their lives and

1 teaching them how to express themselves with  
2 words and to address the adversities they've  
3 lived there. We're not teaching them coping  
4 skills to cope simply with being transgender.

5 We're talking about helping them deal  
6 with the forces that are swirling about, around  
7 them and within them. And coping with and  
8 understanding the body, the discomfort with the  
9 body that is normal for a 13 year old, you see?  
10 It's not about curing gender dysphoria. It's  
11 about helping them be a more psychologically  
12 capable human being by knowing themselves and  
13 being able to be courageous enough to describe  
14 their feelings about their parents and their  
15 parent's interactions with each other and with  
16 them. It's addressing their personhood in all  
17 dimensions. And maybe that answer will help  
18 explain why I didn't understand your questions.

19 Q. So teaching coping and resilience  
20 skills is not a treatment that you employ to  
21 treat gender dysphoria in adolescents or  
22 children?

23 A. It's to treat the suffering  
24 adolescent.

25 Q. Not their gender dysphoria?

1           A.     No. Their gender dysphoria may be  
2     a product, you see, of these other things. For  
3     example, if you have someone who has been  
4     sexually abused by her stepfather and becomes a  
5     trans person in adolescents, we want to talk  
6     about the sexual abuse and the process between  
7     that person and what fears for the present and  
8     the future that has caused the child. And  
9     we're not attacking their trans identity.  
10    We're trying to help them understand where they  
11    came from and what they're coping with and why  
12    they're so fearful or so distressed by their  
13    body changing.

14           Q.     And their gender dysphoria could be  
15    separate and apart from that traumatic  
16    experience?

17           A.     Theoretically it could be, yes.

18           Q.     And if it persisted sufficiently  
19    enough, you would consider a letter of  
20    authorization for --

21           A.     Yes.

22           Q.     -- hormones?

23           A.     Yes.

24           MR. KNEPPER: Objection, form.

25           Q.     Okay. If you would, please, turn

1 in your report, Dr. Levine, to page 22. Okay.  
2 My apologies. Actually beginning at the very  
3 bottom of page 21.

4 A. Okay.

5 Q. So the report states, "[The  
6 recently released National Guidelines for  
7 Gender Dysphoria patients" -- now on to 22 --  
8 "from Sweden and Finland do appear to be moving  
9 towards a much greater emphasis on alternative  
10 methods including psychosocial support,  
11 therapy, and long-term psychosocial  
12 evaluations -- perhaps for years -- prior to  
13 engaging in any 'affirmation' medical  
14 interventions (hormones or surgery)." I'm  
15 sorry. Did I read that correctly?

16 A. Yes.

17 Q. Okay. I promise it's one of those  
18 legal things that I just have to do. I know it  
19 seems very tedious, but I appreciate your  
20 patience.

21 A. I agree it's very tedious.

22 Q. I appreciate your patience.

23 So your report for that section there  
24 cites to an article entitled, "Finland Issues  
25 Strict Guidelines For Treating Gender

1       Dysphoria." Do you see that there? It's just  
2       the next sentence.

3             A.       Is that a question?

4             Q.       Yes. Do you see the citation  
5       there?

6             A.       Yes.

7                     - - - - -

8                     (Thereupon, Deposition Exhibit 9,  
9                     "Finland Issues Strict Guidelines  
10                    for Treating Gender Dysphoria,"  
11                    Article, was marked for purposes of  
12                    identification.)

13                    - - - - -

14            Q.       Okay. For the record, showing  
15       Dr. Levine what has been marked as Exhibit 9.  
16       "Finland Issues Strict Guidelines for Treating  
17       Gender Dysphoria." Have you seen this material  
18       before, Dr. Levine?

19            A.       If I have, it hasn't been in this  
20       form.

21            Q.       When you say, "This form," do you  
22       mean --

23            A.       I think I probably read it on --

24            Q.       -- do you mean online you probably  
25       read it?

1 A. Yeah.

2 Q. In the online form.

3 Okay. So this article discusses  
4 Finland's counsel for choices in healthcare in  
5 Finland and the recent expert group that  
6 evaluated the clinical guidelines concerning  
7 medical treatment for people with gender  
8 dysphoria. Does that sound right, based on  
9 your review of that article.

10 A. Um-hum, yes.

11 Q. Okay. You can go ahead and put  
12 that aside.

13 - - - - -

14 (Thereupon, Deposition Exhibit 10,  
15 "Recommendation of the Council for  
16 Choices in Health Care in Finland  
17 (PALKO/COHERE Finland)," Article,  
18 was marked for purposes of  
19 identification.)

20 - - - - -

21 Q. For the record, I'm showing  
22 Dr. Levine what has been marked as Exhibit 10.  
23 "Recommendation of the Council for Choices in  
24 Health Care in Finland..., " "Medical Treatment  
25 Methods for Dysphoria Related to Gender



1 Variance in Minors." Have you seen this  
2 material before, Dr. Levine?

3 A. Yes.

4 Q. Okay. If you would, please, turn  
5 to -- sorry. The page numbers are a little  
6 screwy, so I want to make sure I send you to  
7 the right place. So you're looking for in the  
8 upper right-hand corner 9 and in parentheses  
9 there's a 14. So I would call that page 9,  
10 but -- do you see that?

11 A. I have it.

12 Q. And at the bottom -- or, I'm sorry.  
13 Let's start in the middle where the title for  
14 that section is, "PALKO/COHERE considers that  
15 the consultation, periods of assessment, and  
16 treatments by the research group on the gender  
17 identity of minors at TAYS or HUS must be  
18 carried out according to the following  
19 principles."

20 And then looking at paragraph number 2  
21 under that heading. Do you see that section?

22 A. Yes.

23 Q. Okay. And then beginning with the  
24 second sentence of that paragraph, "Based on  
25 these assessments" -- do you see that?

1 A. Yes.

2 Q. Okay.

3 -- "puberty suppression treatment may be  
4 initiated on a case-by-case basis after careful  
5 consideration and appropriate diagnostic  
6 examinations if the medical indications for the  
7 treatment are present and there are no  
8 contraindications." Did I read that correctly?

9 A. Yes.

10 Q. Okay. And then looking at --  
11 sorry. Let me pause there. So this treatment  
12 recommendation says that puberty suppression  
13 treatment may be initiated on a case-by-case  
14 basis, correct?

15 A. Yes.

16 Q. Okay. Which is to say treatment --  
17 I'm sorry -- puberty suppression treatment is  
18 not categorically banned according to the  
19 Cohere Finland recommendations, correct?

20 A. Yes.

21 Q. Okay. And then beginning at  
22 paragraph 4, which is at the bottom of the  
23 page, "Based on a thorough, case-by-case  
24 consideration, the initiation of hormonal  
25 interventions that alter sex characteristics

1 may be considered before the person is 18 years  
2 of age only if it can be ascertained that the  
3 identity as the other sex is of a permanent  
4 nature and causes severe dysphoria. In  
5 addition, it must be confirmed the young person  
6 is able to understand the significance of  
7 irreversible treatments and the benefits and  
8 disadvantages associated with lifelong hormone  
9 therapy, and that no contraindications are  
10 present." Am I reading that correctly?

11 A. Yes.

12 Q. Okay. Thank you. So according to  
13 this recommendation of the Cohere guidelines,  
14 hormonal interventions for people under 18  
15 years of age may be initiated, correct?

16 A. Yes.

17 Q. Okay. So taken together, the  
18 Cohere recommendation guidelines do not  
19 completely prohibit all gender affirming care  
20 for children and adolescents in Finland,  
21 correct?

22 MR. KNEPPER: Objection, form.

23 A. I think that's a very carefully  
24 worded statement that ignores --

25 Q. I know, Dr. Levine, but I would

1       like your answer to that carefully worded  
2       statement. So do the Finland Cohere  
3       recommendations not completely prohibit all  
4       gender affirming care for children and  
5       adolescents?

6                   MR. KNEPPER: Objection, form.

7               A.       It doesn't permit -- it doesn't  
8       prohibit every treatment -- every child from  
9       getting treatment --

10           Q.       Perfect.

11           A.       -- it does, however, provide many  
12       contraintra -- the opportunity for  
13       contraindications, which have not been even  
14       mentioned in this part of our deposition.

15           Q.       Going back to your report,  
16       Dr. Levine, page 22. You can put that aside.

17           A.       (Witness complies.)

18           Q.       So closer to the bottom of page 22,  
19       I would say, the bottom quarter of the page,  
20       you cite -- or excuse me -- your report cites,  
21       "See also, a Swedish National Investigative  
22       Report regarding cases of gender incongruence  
23       in children and young people, Article  
24       number 2021-3-7302." Do you see that sentence?

25           A.       Yes.

1

- - - - -

2

(Thereupon, Deposition Exhibit 11,

3

"Stod och utredning vid

4

konsinkongruens hos barn och

5

ungdomar," Article, was marked for

6

purposes of identification.)

7

- - - - -

8

Q. Okay. And so then for the record,

9

I've handed to Dr. Levine what has been marked

10

as Exhibit 11. Do you have it?

11

A. Yes.

12

Q. Okay. Great. And that would be

13

Swedish National Investigative Report article,

14

number 2021-3-7302 published March 2021. Have

15

you seen this article before, Dr. Levine?

16

A. It's in Swedish. I didn't see it

17

in Swedish.

18

Q. Okay. It has been published in

19

English?

20

A. It has been translated, I think.

21

Q. Okay. But Sweden also does not

22

block all access to gender affirming treatment

23

for adolescents with gender dysphoria?

24

A. Yeah, Sweden allows them if they're

25

in a scientifically valid research protocol.

1 Other than that, it's my understanding that  
2 they are not giving puberty blockers or  
3 cross-sex hormones to Swedish children who are  
4 transgender identified. They have to be  
5 referred to a particular hospital that is the  
6 center of the research and they have to be part  
7 of a protocol.

8 Q. But it's not indicated to give  
9 children cross-sex hormones ever, right?

10 A. I'm sorry?

11 Q. It's not ever indicated to give  
12 children cross-sex hormones, right? You just  
13 said they don't give children cross-sex  
14 hormones.

15 A. Adolescents.

16 Q. Adolescents. Okay. Okay. You can  
17 set that aside.

18 If you would please turn to page 27 of  
19 your report.

20 MR. CHARLES: Actually, before we  
21 do that, would you all mind if we take a short  
22 break?

23 MR. KNEPPER: Sure.

24 MR. CHARLES: Okay.

25 VIDEOGRAPHER: Off the record 1:56.

1 (Recess taken.)

2 VIDEOGRAPHER: On the record 2:09.

3 BY MR. CHARLES:

4 Q. So, Dr. Levine, we're on page 27 of  
5 your report. About a third of the way down the  
6 page, there's a sentence that begins, "One has  
7 to wonder why the suicide rate is reportedly so  
8 very high for patients who received trans  
9 genital surgery."

10 So my question about your statement there  
11 is: Highest compared to whom?

12 A. I'm sorry. What's your question  
13 about this?

14 Q. The sentence says, "One has to  
15 wonder why the suicide rate is reportedly so  
16 very high for patients who received trans  
17 genital surgery." And my question is: Highest  
18 compared to whom?

19 A. The general population.

20 Q. Okay. And on what study or  
21 scientific research are you basing that  
22 assertion on?

23 A. Probably the best study that's ever  
24 been published out of Sweden, a thirty-year  
25 followup of everybody who has ever had sex

1 reassignment surgery over a thirty-year period  
2 and tracking the suicide rate compared to both  
3 male and female populations born in the same  
4 month, in the same year in Sweden where the  
5 suicide rate was 19.1 times higher than either  
6 of the control groups --

7 Q. Are you referring to the --

8 A. -- excuse me. And there's a  
9 similar study of everyone in sex reassignment  
10 surgery who had over a thirty-year period in  
11 Denmark, where the suicide rate was also high.  
12 And Sweden also published a newer study that  
13 showed the suicide rate compared to the general  
14 Swedish population was 3.5 times as high. And  
15 a recent study also has confirmed the higher  
16 suicide rate. And certainly those study -- you  
17 know very well the Branstrom and Pachankis  
18 study also documented the suicide rate after  
19 sex reassignment surgery. So this is not a  
20 controversial issue.

21 Q. Okay. That's fine, Dr. Levine. I  
22 just wanted to know about the studies. The 3.5  
23 suicide rate study out of Sweden, you're not  
24 referring to the, I believe it's pronounced  
25 Dhejne study, D-h-e-j-n-e?



1           A.       No, no. No one can pronounce that  
2 name who doesn't live in Sweden.

3           Q.       That's comforting. At least I'm  
4 not outside the norm on that pronunciation.

5           A.       So if you say the name, I won't  
6 recognize it because --

7           Q.       I'll just spell it for you.

8           A.       That's right.

9           Q.       So -- sorry. The 3.5 times higher  
10 suicide rate out of Sweden study is not that  
11 one. Do you recall the name of the 3.5?

12          A.       I don't know if it's in my report  
13 somewhere, but it was -- it was a Swedish  
14 council report. I'm sure it's in my study  
15 somewhere.

16          Q.       Okay.

17               MR. KNEPPER:    Objection, form.  
18 One thing, Carl, I think the witness said that  
19 it was 3.5 in Denmark.

20               THE WITNESS:    No.

21               MR. CHARLES:    He said, "Sweden."

22          A.       It was Sweden. It was like the  
23 year 2018 or 2019, the suicide rate of trans  
24 identified people was 3.5 times the general  
25 population --

1 Q. And then --

2 A. -- which is an improvement over the  
3 Dhejne study.

4 Q. Well, I like that Dhejne study.  
5 And then after that study, you mentioned one  
6 more. You said, another recent study out of  
7 Sweden. Do you recall what that study was you  
8 were referring to?

9 A. I'm sorry. I just read it. I  
10 wonder if -- I'm not sure. I think it might be  
11 the Griffin study summarized some of the data.

12 Q. Is Griffin out of Sweden or Griffin  
13 might have just reviewed that?

14 A. No. It's Griffin and four other  
15 people and they weren't all from Sweden --

16 Q. Oh, okay.

17 A. -- it was reviewing the Swedish  
18 data along with other kinds of data. This is  
19 everybody's concern. It's not just on my side,  
20 so to speak.

21 Q. Sorry. Just to back up for a  
22 second. The control group in the Dhejne study  
23 consisted of controls from the general  
24 population, not transgender people with gender  
25 dysphoria who did not undergo surgery, correct?

1           A.       That is correct. And may I add  
2       that it's very, very difficult to understand.  
3       The natural question would be, how do you  
4       compare the general population with the trans  
5       people who did not have surgery with the trans  
6       people who did have surgery.

7           Q.       Thank you, Dr. Levine. That's not  
8       my question, though. I just wanted to confirm  
9       that was not the control group. You mentioned  
10      this study later in your report, page 66  
11      beginning at paragraph 74. Do you see that?

12          A.       Um-hum.

13          Q.       Okay. And basically that -- well,  
14      here, let me point you exactly. The sentence  
15      starts with, "Similarly," about halfway down  
16      the page, third sentence of that paragraph.

17          A.       Um-hum.

18          Q.       And, as you mentioned, you cite the  
19      Dhejne study and I believe -- or I should ask:  
20      Is the Denmark study you're referencing the  
21      study directly after it --

22          A.       The Simonsen study.

23          Q.       -- the Simonsen study?

24          A.       Yes.

25          Q.       Okay. So beginning with the Dhejne

1 study, do you think because that study showed  
2 that some people committed suicide after gender  
3 affirming surgery that no patient should be  
4 able to access gender affirming surgery?

5 MR. KNEPPER: Objection, form.

6 A. That would be illogical.

7 Q. Okay. Dr. Levine, I understand you  
8 said that would be illogical, but just to be  
9 clear. You're not recommending -- sorry. I'm  
10 not using that word. You're not saying that  
11 the fact that some people commit suicide  
12 following gender affirming surgery means that  
13 there should be a ban on access to that  
14 surgery. Is that right?

15 A. Not for that reason, no.

16 MR. KNEPPER: Objection, form.

17 Q. Not for that reason. Okay. Are  
18 you recommending that there would be bans on  
19 gender affirming surgery for any reason?

20 A. I think there are -- you know, I  
21 think most prudent people in this field, just  
22 to use the example of what you read out loud  
23 about the Finland study, a case-by-case basis.  
24 That's how doctor need to decide things, but  
25 there are many, many reasons to be cautious

1 about anyone having sex reassignment surgery  
2 until we can demonstrate by scientifically  
3 acceptable methods internationally agreed upon  
4 how we're going to evaluate to what extent  
5 gender dysphoria is improved and to what extent  
6 the life quality is improved of these  
7 individuals.

8 So what I'm saying is, science should  
9 have led this field. Science did not lead this  
10 field. And what we're going to do about the  
11 future of gender confirming surgery is  
12 uncertain. It is my hope that we will -- we  
13 will as a result of what has been happening in  
14 the last three years, we will get together in  
15 an international committee and design a study,  
16 a definitive study that will be a long-term  
17 prospective study with agreed upon parameters  
18 of evaluation. And then at a given time, a  
19 separate committee will evaluate whether or not  
20 it's justifiable.

21 Q. But at this time you're not  
22 recommending bans on all gender affirming  
23 surgery?

24 A. At this time I'm recommending  
25 putting science in front of the therapeutic

1 fashion and to be very hesitant about going  
2 forward.

3 Q. But you're not recommending total  
4 bans on gender affirming surgery?

5 A. I'm not recommending total bans.  
6 I'm aware of the individual circumstances of  
7 individual people's lives and their commitment  
8 to transgender living. And I don't want to be  
9 draconian about this. I want to be  
10 compassionate about this.

11 Q. I understand. I appreciate that.  
12 I just want to make sure I'm understanding you  
13 correctly.

14 - - - - -

15 (Thereupon, Deposition Exhibit 12,  
16 "Long-Term Follow-Up of Transsexual  
17 Persons Undergoing Sex Reassignment  
18 Surgery: Cohort Study in Sweden,"  
19 Article, was marked for purposes of  
20 identification.)

21 - - - - -

22 Q. So for the record, I'm presenting  
23 to Dr. Levine what has been marked as  
24 Exhibit 12. "Long-Term Follow-Up of  
25 Transsexual Persons Undergoing Sex Reassignment

1 Surgery: Cohort Study in Sweden,"  
2 February 2011. Dr. Levine, have you seen this  
3 document before?

4 A. Yes.

5 Q. Okay. Thank you. If you would,  
6 please, turn to page -- sorry. Just a moment.

7 Okay. If you would please turn to  
8 page 2, the column on the left-hand side all  
9 the way at the bottom, the paragraph beginning  
10 with, "Here."

11 "Here, we assessed mortality, psychiatric  
12 morbidity, and psychosocial integration  
13 expressed in criminal behaviour after sex  
14 reassignment in transsexual persons, in a total  
15 population cohort study with long-term  
16 follow-up information obtained from Swedish  
17 registers. The cohort was compared with  
18 randomly selected population controls matched  
19 for age and gender. The adjusted for premorbid  
20 difference regarding psychiatric morbidity and  
21 immigrant status. This study design sheds new  
22 light on transsexual persons' health after sex  
23 reassignment. It does not, however, address  
24 whether sex reassignment is an effective  
25 treatment or not."

1           For the 22nd time today, did I read that  
2           correctly?

3           A.     It's the 23rd time.

4           Q.     Oh, okay.

5           A.     Yes.

6           Q.     I was hoping you weren't counting,  
7           but, okay. Did you testify earlier today that  
8           the limitation of the Dhejne study is that the  
9           controls were not transgender persons who had  
10          not undergone gender affirming surgery?

11          A.     Yes.

12                   MR. KNEPPER: Objection, form.

13          Q.     Okay. You can set that aside,  
14          Dr. Levine.

15                   - - - - -

16                   (Thereupon, Deposition Exhibit 13,  
17                   2017 "On Gender Dysphoria," Booklet  
18                   From Department of Clinical  
19                   Neuroscience, Karolinska Institutet,  
20                   Stockholm, Sweden, was marked for  
21                   purposes of identification.)

22                   - - - - -

23          Q.     For the record, Dr. Levine has an  
24          exhibit that has been marked as Exhibit 13.  
25          "On Gender Dysphoria," by Cecilia Dhejne from



1 the department of clinical neuroscience,  
2 Karolinska Institutet, Stockholm, Sweden, 2017.  
3 Have you seen this material before, Dr. Levine?

4 A. No.

5 Q. Okay. So if you please take time  
6 if you need to review it.

7 A. I don't know -- I don't know --

8 Q. That's okay.

9 A. -- this is a Ph.D. --

10 Q. Thesis.

11 A. -- thesis.

12 Q. Yeah.

13 A. What do you want me to do, read it?

14 Q. No. Please don't. That will take  
15 longer than we have.

16 A. Yeah.

17 Q. So this is the thesis for Cecilia  
18 Dhejne, the -- well, the lead author on the  
19 Dhejne study we were just looking at.

20 A. Right.

21 Q. And if you would, please, turn to  
22 page 65. The pages are on the bottom  
23 right-hand corner, I believe.

24 A. I'm on page 65.

25 Q. Oh, you're there. Okay. So the

1 title of that section is, "On The Impact of  
2 Research Findings." I'm, again, reading there.  
3 "Researchers are happy if their findings are  
4 recognized and have an impact. However, once  
5 published, the researcher loses control of how  
6 results are used. Study III is the first  
7 long-term cohort study of mortality and  
8 psychiatric inpatient care following gender  
9 transition (Dhejne et al., 2011). This paper  
10 has also" been used -- I'm sorry -- "has also  
11 had an impact outside the scientific world.  
12 Our findings have been used to argue that  
13 gender-affirming treatment should be stopped  
14 since it could be dangerous (Levine 2016). But  
15 the results have also been used to show the  
16 vulnerability of the group and that better  
17 transgender health care is needed."

18 I'm sorry.

19 "Despite the paper clearly stating that  
20 the study is not designed to evaluate whether  
21 or not gender-affirming care is beneficial, it  
22 has been interpreted as such. But we do not  
23 know what would have happened without  
24 gender-affirming treatment; the situation may  
25 have been even worse. As an analogy, similar

1 studies have found increased somatic morbidity,  
2 suicide rates, and overall mortality for  
3 patients treated for depression and bipolar  
4 disorder. This is important information, but  
5 it does not follow that antidepressant or mood  
6 stabilizing treatment cause the mortality.  
7 Most of the articles that use the study to  
8 argue against gender-affirming health care are  
9 published in non-peer reviewed papers and the  
10 public media in general."

11 Did I read that correctly?

12 A. Yes, you did.

13 Q. Okay. And your testimony today is  
14 not that the provision of gender affirming  
15 surgery increases suicide ideation in  
16 transgender people, right?

17 MR. KNEPPER: Objection, form.

18 A. You seem to have lost of the --  
19 what you just read. Do you want me to comment  
20 on what you just read and -- or excuse me --

21 Q. No.

22 A. -- did you just want to read that?

23 Q. No. That's okay. I'm just  
24 wondering if your testimony is today that  
25 gender affirming surgery increases suicide

1 ideation in transgender people.

2 A. Well, you know about the  
3 Branstrom-Pachankis study and the criticism of  
4 the study --

5 Q. But I'm not talking about the  
6 study.

7 A. -- and part of the study  
8 demonstrated that it increased suicidal  
9 ideation and attempts in the first two and a  
10 half years after surgery, especially in the  
11 first year --

12 Q. Right. Is your testimony --

13 A. -- so I'm not testifying that. I  
14 thought you were asking me about this, which I  
15 need to comment on, because this is not an  
16 accurate depiction of my statement in the  
17 reference. (Indicating.)

18 Q. Well, that's not what I'm asking  
19 about, Dr. Levine.

20 A. Well, you're reading this and I'm  
21 misquoted here. So I don't want you to imply  
22 that she is accurately representing my views,  
23 because I did not say that gender affirming  
24 treatment in general should be stopped. I've  
25 never said that. This is an article about

1 prisoners that she's quoting.

2 Q. Okay. Returning to the -- you can  
3 set that document aside.

4 A. Okay.

5 Q. Okay. So back to your report,  
6 Dr. Levine, on page 66. We're in the middle to  
7 the end of paragraph 74 still. The sentence  
8 there is, "The Swedish follow-up study found a  
9 suicide rate in the post-Sex Reassignment  
10 Surgery population 19.1 times greater than that  
11 of the controls after affirmation," surgery;  
12 "both studies demonstrated elevated mortality  
13 rates from medical and psychiatric conditions."

14 So just keeping that sentence in mind  
15 there.

16 - - - - -

17 (Thereupon, Deposition Exhibit 14,  
18 "Long-Term Follow-Up of Individuals  
19 Undergoing Sex-Reassignment Surgery:  
20 Somatic Morbidity and Cause of  
21 Death," Article, was marked for  
22 purposes of identification.)

23 - - - - -

24 Q. For the record, I'm showing  
25 Dr. Levine what's been marked as Exhibit 14.

1 "Long-Term Follow-Up of Individuals Undergoing  
2 Sex-Reassignment Surgery: Somatic Morbidity and  
3 Cause of Death," March 2016.

4 So after that sentence, Dr. Levine, as we  
5 discussed before, you cited the Dhejne study  
6 and then this study that I've handed you here.  
7 Have you seen this study before?

8 A. This is the Simonsen study. Yes.

9 Q. Great. I just want to clarify.  
10 You're not citing this study for the 19.1 times  
11 greater --

12 A. No, no. The 19.1 comes from the  
13 Swedish study --

14 Q. Okay.

15 A. -- I think in this study, there was  
16 two known suicides.

17 Q. Out of a total group of 104,  
18 correct?

19 A. Maybe a little -- it was something  
20 about the 104 wasn't quite right, but it's  
21 pretty close. It was 2 percent over -- it was  
22 two known suicides, I think in that study. I  
23 haven't read this for a number -- for a long  
24 time, so.

25 Q. Fair enough. We'll just take a

1 quick look at it. On page 1 there, so just on  
2 the back of the title page.

3 A. 104.

4 Q. Yeah. So there in the  
5 introduction, second sentence. "Accordingly,  
6 the present study investigated mortality and  
7 somatic morbidity using a sample of transsexual  
8 individuals who comprised 98%...of all  
9 surgically reassigned transsexual individuals  
10 in Denmark."

11 A. Oh, that's the 98 percent as  
12 opposed to 100 percent.

13 Q. And that 98 percent represented 104  
14 total in the study, right?

15 A. I don't remember.

16 Q. And I think you just mentioned  
17 this, but you said 2 of those 104 were death by  
18 suicide, right?

19 A. They were known to be death by  
20 suicide, yeah --

21 Q. Okay.

22 A. -- I don't know if I remembered  
23 that accurately. Do you know if I remembered  
24 that accurately?

25 Q. I believe you did, but I am double

1 checking.

2 A. What I like about this study is it  
3 gives another demonstration that people die  
4 young.

5 Q. And, Dr. Levine, the years that  
6 they were studying of persons who underwent sex  
7 reassignment surgery was from 1978 to 2010.  
8 That's on the second page there under, "Aims."  
9 Do you see that?

10 A. I'm sorry. What was the final year  
11 that you said?

12 Q. 2010.

13 A. Yeah.

14 MR. KNEPPER: You said third page,  
15 correct?

16 MR. CHARLES: Sorry. You're  
17 saying --

18 MR. KNEPPER: I think page e62 is  
19 the page you're looking at. Is that correct,  
20 with, "Aims"?

21 MR. CHARLES: No. Sorry. I'm  
22 still on the second page.

23 MR. KNEPPER: Okay. I didn't see a  
24 header named, "Aims."

25 MR. CHARLES: Yeah. Under the,



1 "Abstract."

2 MR. KNEPPER: Okay. Yes.

3 BY MR. CHARLES:

4 Q. Okay. And then just to the,  
5 "Conclusion," section there also on page 1 --  
6 I'm sorry -- page 2, Dr. Levine, in the,  
7 "Abstract." Oh, I'm sorry. Actually, let's go  
8 to e65. Do you see, "Conclusion," in the lower  
9 right-hand corner?

10 A. Yes.

11 Q. Okay. So beginning at the very  
12 bottom, the last sentence on page e65, "No firm  
13 conclusions can be drawn," turning over to e66,  
14 "from the present study, because the present  
15 study design does not allow for determination  
16 of causal relations between HT or SRS" --

17 A. It's hormone therapy.

18 Q. -- or sex reassignment surgery and  
19 somatic morbidity or mortality."

20 Did I read that correctly? It's a trick  
21 question. It's not. It's not a trick  
22 question.

23 A. For the 24th time, yes.

24 Q. I thought we were on 25. Okay.  
25 You can set that aside.

1 A. I gather that wasn't a question.

2 Q. No. I just wanted to --

3 A. You just wanted to read that into  
4 the record?

5 Q. Um-hum. You got it.

6 A. I see. Do you want me to comment  
7 on it?

8 Q. Not at this time.

9 A. Okay.

10 Q. Thank you.

11 A. Please note that you may not ask me  
12 to comment on it in the future, but I have a  
13 comment on it.

14 Q. Okay. I appreciate that. Thank  
15 you.

16 Okay. Dr. Levine, have the majority of  
17 your patients, to your knowledge, persisted in  
18 their transgender identity? Key phrase, "To  
19 your knowledge."

20 A. Well, my knowledge is limited about  
21 the long-term follow up of my patients. And  
22 I'm aware of those who haven't persisted,  
23 because they come back, but I'm not aware of  
24 those who may or may not have persisted. It's  
25 very hard for me to answer that question, other

1           than as I just did.

2           Q.       Okay. How many -- let's go back  
3 to: How many patients specifically for issues  
4 related to gender dysphoria or gender identity  
5 have you treated in the past year?

6           A.       In the past how many years?

7           Q.       In the past one year, so twelve  
8 months back from now.

9           A.       Asterisk, ten to twelve.

10          Q.       Okay. And did any of those  
11 approximated ten to twelve patients in the past  
12 year decide not to transition?

13          A.       Well, one died of a heroine  
14 overdose --

15          Q.       I'm sorry to hear that.

16          A.       -- and one has stopped his  
17 transition far less than what he used to say he  
18 wanted to do, but is still living in a trans  
19 way. If you extend it to 15 months, then the  
20 answer is one has returned to living as a male.

21          Q.       Of the patient who you said has not  
22 continued their transition to the extent they  
23 initially said, you said they were still living  
24 in a trans way. Does that mean they're a  
25 person who's still living as a woman --

1 A. Yes --

2 Q. -- in the world?

3 A. -- is living as a woman.

4 Q. Okay. Would you say that -- let's  
5 look at the last five years. Would you say  
6 that your patients generally with gender  
7 dysphoria or gender identity issues, that most  
8 of them decide to transition in some capacity?

9 MR. KNEPPER: Objection, form.

10 A. Mr. Charles, you'll forgive me, but  
11 I wish I had a long opportunity to talk to you  
12 and your staff about the nature of gender  
13 identity. Gender identity is a more complex  
14 subject than gender dysphoria and whether one  
15 is trans or cis, you know. And I spend a lot  
16 of time as a psychotherapist talking to people  
17 in depth over time.

18 People who are cis on their -- on their  
19 presentation but internally, mentally have  
20 identifications as feminine or masculine or as  
21 heterosexual or homosexual as kink and they  
22 don't present themselves in this way. So I  
23 distinguish between the erotic and the internal  
24 and the private and the behavioral. And so  
25 when you ask me this question, I'm a little at

1 a lo -- I'm a little at sea. I don't know  
2 exactly how to answer your question --

3 Q. Sure. Let me rephrase it.

4 A. -- because I'm not sure what you  
5 understand about your question. I certainly  
6 understand your question in a way that may not  
7 be the same as you and your team understand  
8 your question --

9 Q. That's fair. Let me --

10 A. -- so help me out, please.

11 Q. Sure. Would you say that of your  
12 patients with gender dysphoria or gender  
13 identity issues, that the majority of them  
14 ultimately decide not to transition?

15 A. I don't know what the majority of  
16 them ultimately decide. You see, people see a  
17 psychiatrist like me for a period of time in  
18 their life. We talk about their issues. Then  
19 they go away. I don't know what happens to  
20 them, unless they choose to come back to me.  
21 When they choose to come back to me, it's  
22 usually because they have a problem again. It  
23 may not be gender dysphoria per se. It may be  
24 depression or substance abuse or whatever.

25 Q. Okay. I realize you have a great

1 deal of paper in front of you, but I need to --  
2 oh, never mind. I need to do something  
3 different.

4 - - - - -

5 (Thereupon, Deposition Exhibit 15,  
6 5/15/2017 Telephonic Deposition of  
7 Stephen B. Levine, M.D., was marked  
8 for purposes of identification.)

9 - - - - -

10 Q. Okay. For the record, I've shown  
11 Dr. Levine what has been marked as Exhibit 15,  
12 which is Keohane, K-e-o-h-a-n-e, versus Jones,  
13 the telephonic deposition of Stephen Levine,  
14 M.D., May 15, 2017.

15 A. I forgot I gave a deposition. I  
16 forgot this.

17 Q. Do you recognize the title page of  
18 this document, Dr. Levine?

19 A. I do.

20 Q. Okay. And do you remember now  
21 giving a deposition in this case?

22 A. I remember being in the courtroom  
23 about this case. I don't actually remember the  
24 deposition yet, but I'm sure I will as you go  
25 on.

1 Q. Okay. If you would, please, let's  
2 first turn to page 19.

3 A. 19?

4 Q. 19, 1-9.

5 A. (Witness complies.)

6 Q. So beginning at line 15. Actually,  
7 I'm sorry. Let's go to page 20, 2-0. I'm  
8 sorry, Dr. Levine. We do need to start on  
9 page 19 at the very bottom, the very last line  
10 starting with the word, "Okay," at line 25. Do  
11 you see that there?

12 A. Yes.

13 Q. "Okay. And how many of your ten or  
14 so" -- turning the page to page 20 -- "patients  
15 in the past year determined after real-life  
16 experience not to transition?"

17 Answer: "I'm sorry. You ask how many of  
18 the patients in the last year decided not to  
19 transition?"

20 Question: "Yes."

21 Answer: "Well, one."

22 Question: "Just one. And the rest went  
23 forward with their process of transitioning?"

24 Answer: "Well, some of the people, you  
25 know, I've seen in the last year I've seen for

1 a number of years."

2 Question: "Uh-huh."

3 Answer: "Let me modify that. I just  
4 thought, there's a second person. So two."

5 Question: "Two. And would you say, of  
6 your patients generally with gender dysphoria  
7 or gender identity issues, that the majority of  
8 them ultimately decide not to transition, or is  
9 that more the exception?"

10 Answer: "No. I think the majority of  
11 them persist in transitioning."

12 Did I read that correctly?

13 A. Yeah, yes.

14 Q. Okay. So you can set that aside  
15 for the time being, Dr. Levine. We might come  
16 back to it so I would leave it on the top of  
17 the pile.

18 Okay. Let's go back to your report  
19 beginning at page 40, 4-0.

20 A. My report?

21 Q. Yes, sir. Okay. And at  
22 paragraph 54, about halfway down the page on  
23 page 40. "A distinctive and critical  
24 characteristic of juvenile gender dysphoria is  
25 that multiple studies from separate groups and



1 at different times have reported that in the  
2 large majority of patients, absent a  
3 substantial intervention such as social  
4 transition and/or hormone therapy, gender  
5 dysphoria does not," continue, "through  
6 puberty."

7 So there are some children who persist in  
8 their asserted gender identity through puberty,  
9 correct?

10 MR. KNEPPER: Objection, form.

11 A. Correct.

12 Q. And some who persist in wanting to  
13 transition via medical treatments?

14 MR. KNEPPER: Objection, form.

15 A. Yes. Some of the children have  
16 learned about medical treatments somewhere  
17 along the line and they feel instantly that  
18 this is for them.

19 Q. And then looking at paragraph 56,  
20 which is on page 41, so just the very next page  
21 on the bottom, the second sentence in that  
22 paragraph. "I observe an increasingly vocal  
23 online community of young women who have  
24 reclaimed a female identity after claiming a  
25 male...identity at some point during their teen

1       years."

2               But there are some patients who assert a  
3       male gender identity in their teen years and  
4       continue to assert it into adulthood, correct?

5               A.       Yes.

6               MR. KNEPPER:   Objection, form.

7               Q.       Okay.   Can social transition be  
8       used to treat gender dysphoria in adults?   Not  
9       looking at your report, now, Dr. Levine.  
10       Sorry.   Can social transition treat gender  
11       dysphoria in adults?

12              A.       Yes.   As a matter of fact, that  
13       used to be the recommendation in the '70s  
14       and '80s, prior to taking hormones, was to try  
15       living, what was sometimes called the real-life  
16       experience or the real-life test for one year.  
17       And then if when you confront the new issues of  
18       confronting you in your new neo gender, if you  
19       still want to do that, then we'll come back and  
20       we'll think about using hormones to facilitate  
21       your transition.   But in the 7th edition of the  
22       standards of care that was removed.   There's no  
23       real-life experience, real-life test anymore.  
24       If persons want it, they should have it.  
25       Patient autonomy was valued far greater than

1 any kind of concerns about patients and about  
2 doctors and parents and the patient's own  
3 concerns.

4 Q. Are there some patients who still  
5 use -- what did you call it? -- real-life  
6 experience as a treatment, though, even though,  
7 as you said, it may not be required by the  
8 standards of care?

9 MR. KNEPPER: Objection, form.

10 A. Well, are there some people  
11 somewhere in the universe who do that? I'm  
12 sure there are. Sure. I mean, people live  
13 in -- you know, we don't necessarily call them  
14 transgender quickly, but there are people who  
15 are female impersonators and who choose to live  
16 their lives in the opposite gender role, even  
17 though they don't have medical assistance at  
18 all. So the answer to your question must be,  
19 yes, but, again --

20 Q. Oh, yeah. I was --

21 A. -- your question could be  
22 elaborated for a half hour.

23 Q. Sure. I just meant transgender  
24 people particularly and largely because -- or I  
25 guess what I'm asking is: Treatment for

1 transgender people is individual based, right?

2 A. Well, it's both --

3 MR. KNEPPER: Objection, form.

4 A. -- yes, that's partially true. And  
5 ideally that's true, but it's obviously not  
6 entirely true. It's why we're here, is it's  
7 categorically based.

8 Q. Let me rephrase that. You design  
9 treatment for your patients based on what that  
10 patient in front of you, what they need, what  
11 they want, what you determine -- sorry. Not  
12 what you determine, but what you might  
13 authorize?

14 MR. KNEPPER: Objection, form.

15 A. What the patient and I discern  
16 together.

17 Q. Thank you. Okay. Let's jump to,  
18 again, still in your report, page 68.

19 A. We've left 40 and 41? 68.

20 Q. Okay. Looking at the bottom of  
21 page 68, Dr. Levine, paragraph 78. It states,  
22 "Similarly, the American Psychological  
23 Association has stated because approach" --

24 A. Sorry.

25 Q. I apologize.

1 A. Where are you?

2 Q. I'm at paragraph 78 at the bottom  
3 of page 68.

4 A. It doesn't say anything about  
5 American Psychiatric Association in my --

6 Q. Oh, sorry. Give me just a moment.

7 Okay. My apologies. We actually need to  
8 go to page 52. I'm sorry. Page -- I'm sorry.  
9 It's going to be page 56 looking at  
10 paragraph 68. Just let me know if you see  
11 that.

12 A. I see it.

13 Q. Okay. Let me try again. About  
14 halfway down that paragraph, beginning with,  
15 "Similarly."

16 A. Um-hum.

17 Q. "Similarly, the American  
18 Psychological Association has stated,  
19 '...because no approach to working with  
20 [transgender and gender nonconforming] children  
21 has been adequately, empirically validated,  
22 consensus does not exist regarding the best  
23 practice with prepubertal children.' See,  
24 American Psychological Association, Guidelines  
25 For Psychological Practice with Transgender &

1 Gender Nonconforming People (2015)."

2 So is that lack of consensus that you  
3 discuss a justification to categorically ban  
4 social transition for children as a treatment  
5 for gender dysphoria?

6 MR. KNEPPER: Objection, form.

7 A. By, "Children," you mean 6 and 7  
8 year olds?

9 Q. Those for whom medical intervention  
10 is not indicated.

11 A. Is that a reason to ban it?

12 Q. Correct, social transition.

13 MR. KNEPPER: Objection, form.

14 A. The reason to -- so let me qualify  
15 that. There's a, yes, answer, there's a reason  
16 to ban it. And the reason to ban it is both a  
17 developmental and an ethical reason. There  
18 have been eleven studies of these cross-gender  
19 identity children who are not socially  
20 transitioned and the vast majority of them  
21 de-transition by the time they're mid  
22 adolescents or older adolescents. They become  
23 homosexual individuals usually or bisexual  
24 individuals, but they are cis gender.

25 So if we take a 6-year-old child and

1 transition them, because he says he wants to be  
2 a girl, he likes to play as a girl or a boy.  
3 You know, I don't want to have to always go  
4 back between two sexes. And we know that,  
5 let's say -- let's just pick a number -- 85  
6 percent of them, if we do nothing, are going to  
7 detransition. Then why in the world would we  
8 transition them, knowing that once we do  
9 transition them, by the time they're 10 years  
10 old, they're going to persist and stabilize in  
11 their cross-gender identity they have committed  
12 their lives to living and portraying themselves  
13 for four years as a girl, as a girl?

14 And their rates of detransition in  
15 adolescents are reduced from 85 percent to  
16 about 20 percent. That is an ethical problem.  
17 It pervades everyone who thinks about this.  
18 There's no escaping the ethics that we may be  
19 preventing -- trying to prevent, inadvertently  
20 perhaps, the development of homosexuality in  
21 adolescents. And so the answer is, that's one  
22 of the reasons for doing it.

23 The other reason for doing it -- for  
24 prohibiting it is, until it has been  
25 demonstrated that these children who are

1 transitioned grow up to have full lives, we  
2 know they're going to want to have surgery.  
3 They're going to want to be on hormones for the  
4 rest of their lives. And we need to find out  
5 whether twenty years later, those children are  
6 having productive lives. They're not on  
7 welfare. They're not uneducated. They're not  
8 drug abusing.

9 So the idea that because a child is  
10 identified cross genderly at age 6, that we are  
11 going to commit that child to a life as a  
12 transgender person, that is -- that is when  
13 it's scientifically not established. Nobody  
14 has lived twenty years. We don't have any  
15 study of a twenty-year follow-up of this thing.  
16 And this is what has been going on in  
17 pediatrics recently, you see?

18 That we've been saying, the best  
19 treatment for these children is to transition  
20 them. We don't know it's the best treatment.  
21 We don't know the outcome. The best outcome we  
22 have is that those children are almost the same  
23 as their peers, their siblings when they're 9  
24 or 10. We don't have a followup study even  
25 into adolescents, so. That's my answer to your



1 question --

2 Q. Okay.

3 A. -- come on, let's say science  
4 should lead, not fashion, not politics.  
5 Science. And science requires followup  
6 studies. And the natural history is -- the  
7 concept in science of the natural history of  
8 disease is very important. We don't -- we know  
9 the natural history. That's desistance. We  
10 don't know the natural history of treatment.

11 Q. So if you would, please, find the  
12 Claire deposition for me, Dr. Levine. I'm not  
13 sure where in your stack of documents it's  
14 going to be, but it's Exhibit --

15 A. Claire?

16 Q. Claire, yeah.

17 A. Oh, that Florida deposition?

18 MR. KNEPPER: Yeah, I think it's  
19 Exhibit 2.

20 A. I haven't got the neatest desk in  
21 the world here, so.

22 Q. I don't have it either, so. Oh,  
23 got it.

24 A. Is that the Tilley or --

25 Q. Yeah, that's the one.

1           A.     Okay. I have some of those pages.  
2     I don't know where the rest are. Oh, here, I  
3     have it.

4           Q.     You have it?

5           A.     Yeah, I have it. They're not in  
6     order. They're left out in 157.

7           Q.     We're not going far from that.  
8     We're going to page 150.

9           A.     150.

10          Q.     Actually, let's start on page 149.

11          A.     On page what?

12          Q.     149.

13          A.     I'm going to get there.

14          Here, I am.

15          Q.     All right. Page 149 beginning at  
16     line 22. Question: "Okay. Okay. At the  
17     bottom of page 15, you say, 'Consensus does not  
18     exist regarding best practice with prepubertal  
19     children."

20                 Line 25, "Do you see that?"

21          A.     I do.

22          Q.     Sorry. I was reading the  
23     transcript, which says, "Do you see that," but  
24     I'm glad you see that. Now to page 150 at the  
25     very top.

1 A. Yes.

2 Q. Okay. Yes. I'm sorry.

3 Answer: "Yes."

4 Question: "In your view, does that lack  
5 of consensus justify a categorical ban on  
6 social transition for gender dysphoria for  
7 prepubertal children?"

8 Answer: "It doesn't justify it. I just  
9 think it's -- I don't think -- you see, I am  
10 not -- I am not recommending" -- I'm sorry.  
11 "You see I am not -- I am not recommending  
12 bans." Did I read that correctly?

13 A. Number 26.

14 Q. Okay. I have an undefeated record.  
15 Okay. So relatedly in some cases, so looking  
16 at not 6 or 7 year olds. Older. Could puberty  
17 delaying medication be indicated or appropriate  
18 treatment for youth with gender dysphoria?  
19 Sorry. Could you hear me?

20 A. I heard you --

21 MR. KNEPPER: Objection, form.

22 A. -- but I'm trying to link what you  
23 just read to your question, because you didn't  
24 ask me a question about what you read --

25 Q. Oh, yeah.

1           A.     -- nor you didn't ask me to comment  
2     on that.

3           Q.     It was related to what you had said  
4     before. So this is related but not related to  
5     what we just read. So you can put that aside.

6           A.     Okay. But your next question was  
7     about puberty blocking hormones, which are not  
8     being used for 6-year-old's and 7-year-old's --

9           Q.     Correct, yes, a separate group of  
10    people.

11          A.     -- so we're on a different  
12    category.

13          Q.     Yes.

14          A.     Okay. So you asked me if I think  
15    puberty blocking hormones should be used on a  
16    case-by-case basis?

17          Q.     Correct, yes.

18          A.     I don't think so.

19          Q.     So that is to say, there are no  
20    circumstances you would advocate for a total  
21    ban on that intervention?

22                 MR. KNEPPER: Objection, form.

23          A.     Number one, I've never seen a child  
24    where that has come up where I thought it was a  
25    good idea. In the cases I've seen, it was like

1 a treatment for the mother's pathology, not for  
2 the child. And it's like a warning sign, boy,  
3 be careful. You see, if you see one case like  
4 that, you wonder -- and it's so conspicuous,  
5 you wonder in the next case, if the same thing  
6 is going on in a more subtle way.

7 Is the child acting out the ambitions of  
8 the mother or the father? I just think  
9 prudence -- I think considering the child has  
10 not gone through puberty or has not gone far  
11 into puberty and puberty brings all kind of  
12 psychological, physical and social changes to a  
13 child and those changes lead to desistance in  
14 many, many children, to put them into a state  
15 where all their peers are developing physically  
16 and they're going to be poirot (phonetic).

17 And then most of those children have  
18 social anxiety problems and they avoid -- they  
19 don't have friends, right. And this is going  
20 to make them even more different than their  
21 peers and it's gone to deprive them of the  
22 sexualization of their mind and the discovery  
23 of masturbation and the discovery of sexual  
24 desire for partners, you see. This is only  
25 going to increase the child's difference from

1 her peers or his peers and I don't think this  
2 is a prudent idea.

3 And if you wanted me to suggest a ban on  
4 anything, it would be a ban on using puberty  
5 blocking hormones, especially when the  
6 evaluation of those children are focused on the  
7 gender dysphoria of the child and not on the  
8 background of the child and not on what's going  
9 on. So I think that's an answer to your  
10 question.

11 If we're going to use these drugs, if  
12 we're going to use social transformation of  
13 children, if we're going to use puberty  
14 blocking hormones, it should only be used in a  
15 carefully designed protocol. And follow up has  
16 to be guaranteed so in one year and in two  
17 years and in three years and before we start  
18 giving cross-gender hormones we have data --

19 Q. Sorry.

20 A. -- so the answer to your question  
21 is, I would consider banning puberty blocking  
22 hormones even for children who have been  
23 cross-gender identified for four years to give  
24 them a chance to desist, which is exactly what  
25 the Dutch protocol did, by the way.

1           Q.     Sorry. So you just said you would  
2     ban -- you would recommend a ban on --

3           A.     If --

4                     MR. KNEPPER: Objection, form.

5           A.     -- look, I'm a doctor. I'm not a  
6     policy maker --

7           Q.     I understand, yes.

8           A.     -- if you ask me my political  
9     opinion about, should we ban this, is that a  
10    reasonable thing, I think there's a very strong  
11    argument for banning puberty blocking hormones.

12          Q.     Okay. And, right. So you're here  
13    as an expert offering an expert opinion. So  
14    are you separating that from -- like are you  
15    saying your political views that you would  
16    advocate for bans or are you saying your expert  
17    opinion you're offering in this case is you  
18    would recommend ban?

19                     MR. KNEPPER: Objection, form.

20          A.     I would recommend ban. To what  
21    extent it's from my politics or from my being a  
22    parent or from my being a doctor, I don't know.  
23    I would recommend we not use puberty blocking  
24    hormones.

25          Q.     In Claire, in this case that we

1 just looked at in December of 2020, which is  
2 not even a full year ago, you testified  
3 differently. So what has changed in nine  
4 months?

5 MR. KNEPPER: Objection, form.

6 A. What has changed in nine months?  
7 In nine months, I've reviewed a lot of the  
8 literature. I've heard the arguments. I've  
9 talked to pediatric endocrinologists. I've  
10 read articles, new articles. I've seen the  
11 lack of follow-up. I've seen the  
12 misinformation that puberty blocking hormones  
13 were entirely reversible, even in the face of  
14 the fact where people making those claims could  
15 not even conceptualize the psychosocial  
16 implications of remaining poirot (phonetic).  
17 So a lot has changed in nine months. And I  
18 don't think nine months ago I was exactly  
19 gung-ho on these treatments, but I think I'm  
20 just a little more strong today.

21 And I just need to tell you that one of  
22 the great advantages of being a professional is  
23 that one spends one's life learning and  
24 evolving and changing. And the fact that five  
25 years ago or ten years ago, I thought this and



1       today I think this, it may be a problem in the  
2       legal profession, but it's not a problem in the  
3       medical profession. We expect doctor's  
4       concepts to evolve with clinical experience in  
5       advance of science. And we also know that  
6       politics affects a lot of things that happen in  
7       medicine. And certainly the politics has  
8       changed in this field.

9               And what is happening, we've had one  
10       direction of the politics of transgender life  
11       until the last two and half years, three years  
12       and suddenly the politics are changing again.  
13       And they're changing as a result of science,  
14       some of the things you've been -- in these  
15       exhibits, you see. And so we're -- I'm allowed  
16       to, in my view, without being embarrassed, I'm  
17       allowed to have an evolution in my views as  
18       certainly -- you know, if you quote one  
19       sentence here and one sentence here and another  
20       sentence out of context there, it appears that,  
21       oh, my god, I'm inconsistent, but what I am is  
22       in evolution, in developmental, professional  
23       evolution, which is an ideal thing both in a  
24       lawyer and in a physician.

25              Q.       All right. Very quickly and then

1 we'll take a break. Will you just turn to  
2 page 157 of the same document that you have in  
3 your hand. 157.

4 A. Got it.

5 Q. All right. So turning to line 19  
6 at the bottom of 157 there.

7 Question: "I know you said you are not  
8 about categorical bans, but let me ask you  
9 about minors again.

10 Would you support a categorical ban on  
11 access to puberty blockers to treat gender  
12 dysphoria?"

13 Ms. Coles: Form."

14 Turning the page to 158.

15 Answer: "I actually think it's in a  
16 vast, vast majority of cases a terrible idea.

17 By Mr. Tilley:"

18 Question: "To provide puberty blockers?"

19 Answer: "Right."

20 Question: "So you think it's a bad idea  
21 in the vast majority of cases. Does that mean  
22 you think it's an acceptable idea in very  
23 limited cases?"

24 Answer: "Yes."

25 Question: "What cases would those be?"

1           Answer: "Where we had a healthy mother  
2           and father, an intact family who was  
3           psychologically informed and who has -- where a  
4           child has come out of toddlerhood acting  
5           consistently in a gender atypical fashion, and  
6           where the parents are not homophobic..."

7           Question: "The parents are not what kind  
8           of people?"

9           Answer: "Homophobic."

10          For the 27th time, did I read that  
11          correctly? Did I read that correctly?

12          A.       Yes.

13          MR. CHARLES: Okay. All right.  
14          Let's go ahead and take a break for a few  
15          minutes.

16          VIDEOGRAPHER: Off the record 3:20.

17          (Recess taken.)

18          VIDEOGRAPHER: On the record 3:38.

19          BY MR. CHARLES:

20          Q.       So, Dr. Levine, before the break,  
21          you were talking about 6 and 7 year olds and  
22          you mentioned there were eleven studies. Can  
23          you identify which eleven studies from your  
24          report you're referring to?

25          A.       Cantor, the reference Cantor lists

1 the eleven studies and these eleven studies  
2 have been done over probably thirty years.

3 Q. Okay. So Cantor was one review of  
4 eleven studies?

5 A. Cantor was a review of the eleven  
6 studies. I can't list to you the eleven  
7 individual studies. The latest one is written  
8 by Singh, S-i-n-g-h. It was published in April  
9 of 2021, in the Frontiers of Psychiatry. And  
10 that perhaps is the most comprehensive of them.  
11 And that's the one that confirms -- that's a  
12 study of boys and it confirmed that 12.2, I  
13 think percentage of them persisted over a  
14 thirteen-year period.

15 Q. So that was one -- that was the  
16 Singh study that came out. Is that same study  
17 mentioned in the Cantor review?

18 A. (Nodding.)

19 Q. Okay. And you said that  
20 established that 12.2 percent of prepubertal  
21 boys persisted into adolescents? Okay.

22 A. Yes. This harkens back to the  
23 ethical issue that I talked about before. You  
24 know, if you know that 88 percent of them are  
25 going to persist -- desist, why in the world

1 would you assume you know which ones? Because  
2 we don't know which ones will persist. And why  
3 would you change their fate? And why would you  
4 expose them to a lifelong of hormonal care,  
5 surgery, social problems and all the things  
6 that we know the adult trans community has.

7 Q. Okay. Okay. So thinking of the  
8 patients you've seen for gender dysphoria or  
9 gender identity disorder, when it was called  
10 that, how many of those people who have come  
11 back do so because they have detransitioned or  
12 are considering detransition?

13 MR. KNEPPER: Objection, form.

14 Q. Did you hear me?

15 A. How many have come back to talk  
16 about detransition?

17 Q. Yes.

18 A. In my quick recall memory of  
19 listing in my head privately the names of  
20 people, four.

21 Q. And of those four, obviously  
22 without any identifying information, what did  
23 it mean for them to detransition?

24 A. A return to living and presenting  
25 themselves in their biologic sex. And they've

1       come to understand there's a broad range of  
2       ways of being and that they consist of both  
3       male and female identifications and what they  
4       call stereotypic interests and patterns. And  
5       many of them have recognized they thought boys  
6       we not allowed to have emotions.

7               And now that they've grown up and they  
8       understood that human-beings have emotions,  
9       regardless of the nature of their genitalia,  
10      and that they give themselves the full range of  
11      expressions of themselves; and some of them are  
12      heterosexual and some of them are asexual and  
13      some of them are homosexual. And, you know,  
14      this is all part of the human family, the human  
15      landscape of the evolution of all of our gender  
16      identities. Everyone's gender identity  
17      evolves, according to Dr. Levine.

18             Q.       Thank you. And did any of them  
19      retransition again --

20             A.       No --

21             Q.       -- of those four?

22             A.       -- not as far as I know. If they  
23      did, they didn't consult with me about it.

24             Q.       Okay. Sorry. Let's go to  
25      paragraph 35 of your report, which is on

1 page 32.

2 A. Okay.

3 Q. Paragraph 35 starts at the top  
4 there. Let's go to -- so, first, in your  
5 report, you wrote, "To my knowledge, there is  
6 no credible, reliable-valid scientific evidence  
7 beyond anecdotal reports that psychotherapy can  
8 enable a return to male identification for  
9 genetically male boys, adolescents, and men, or  
10 return to female identification for genetically  
11 female girls, adolescents and women.

12 Controlled studies have never been attempted.

13 On the other hand, anecdotal case report  
14 evidence of such outcomes does exist; I and  
15 other clinicians have witnessed reinvestment in  
16 the patient's biologic sex and some individual  
17 patients who are undergoing psychotherapy. The  
18 Internet contains many such reports."

19 Skipping down, Dr. Levine, to the last  
20 sentence of that paragraph beginning with,  
21 "Recently." Do you see that there?

22 A. Yes.

23 Q. Okay. "Recently, a paper reviewing  
24 the phenomenon of detransition has been  
25 published in which the authors claim to have

1 identified 60,000 case reports world wide on  
2 the Internet. See Exposito-Campos..." --

3 A. That is an error, by the way.

4 Q. Sorry. Which part of that is an  
5 error?

6 A. That, "60,000," is my error. It  
7 should say, "16,000."

8 - - - - -

9 (Thereupon, Deposition Exhibit 17,  
10 "A Typology of Gender Detransition  
11 and Its Implications for Healthcare  
12 Providers," Article, was marked for  
13 purposes of identification.)

14 - - - - -

15 Q. Okay. So for the record, I'm  
16 showing Dr. Levine what has been marked as  
17 Exhibit 17. "A Typology of Gender Detransition  
18 and Its Implications for Healthcare Providers,"  
19 Pablo Exposito-Campos, 2021. Okay. Have you  
20 seen this study before, Dr. Levine?

21 A. Yes.

22 Q. Okay. So on page 1 of this report,  
23 about halfway through the very first paragraph  
24 in the introduction beginning with, "As a  
25 consequence." Do you see that there?



1 A. Yes.

2 Q. Okay. So the quote is, "As a  
3 consequence, our understanding of this issue is  
4 still limited and primarily based on anecdotal  
5 evidence, which comes from a variety of sources  
6 such as personal testimonies shared on the  
7 internet, parental reports, informal surveys  
8 carried out by detransitioners, media outlets,  
9 support groups, documentaries, case studies and  
10 the experiences of clinicians who work with  
11 this cohort."

12 Are personal testimonies shared via the  
13 internet valid, reliable, credible, scientific  
14 data or research?

15 A. If you will look carefully at the  
16 sexologic studies that have been done in recent  
17 years, since the onset of the internet, the  
18 internet is the frequent method of acquiring  
19 information in all kinds of sexologic and  
20 perhaps other forms of research --

21 Q. Well --

22 A. -- there are a lot of concerns  
23 about the validity --

24 Q. That's not my question, Doctor.

25 A. -- you were asking me about the

1 validity --

2 Q. No. I'm asking you --

3 A. -- is it a valid, scientific  
4 method.

5 Q. -- are personal testimonies on the  
6 internet valid, credible scientific data?

7 MR. KNEPPER: Objection, form.

8 A. The answer to your question is, one  
9 testimony does not make validity and --  
10 but 16,000 perhaps makes one generate a  
11 hypothesis, you see, that is more compelling.  
12 So as your question stands, the answer is, no,  
13 but it needs an asterisk to that. And I don't  
14 want you to force me into making statements I  
15 don't believe.

16 Q. I'm not forcing you into making  
17 statements --

18 A. Well, then --

19 Q. -- I'm just clarifying my  
20 questions.

21 A. -- that's why I'm explaining that  
22 to you --

23 Q. Okay. Well --

24 A. -- if you just look at journals,  
25 how many articles are being published today

1 based on internet information including many of  
2 the pro trans articles that purport that  
3 surgery helps people in their lives, they're  
4 based on internet surveys of, you know, 26,000  
5 people or 6,000 people and so forth --

6 Q. Okay.

7 A. -- so, yes, there are limitations.  
8 There are distinct advantages, big numbers, and  
9 there are distinct scientific limitations where  
10 you don't know who your subjects are.

11 Q. Okay. So you mentioned earlier  
12 that, "60,000," was an error on your part and  
13 that that should read, "16,000." Is that  
14 correct?

15 A. Yes.

16 Q. Okay. So if you could turn to  
17 page, it's going to be page 273 in the study.  
18 And the page numbers are in the upper  
19 right-hand corner. Do you see that page there?

20 A. Yes.

21 Q. Okay. Going down under the  
22 subheading, "Further clarifications" --

23 A. Um-hum.

24 Q. -- beginning at the second  
25 paragraph of that section. "It is also

1 important to note that this typology does not  
2 suggest two clear-cut categories, for a  
3 secondary detransition can lead to a primary  
4 detransition" -- oh, sorry. Let me start over.  
5 Sorry.

6 Okay. Let me start from a different  
7 place, Dr. Levine. The second sentence.

8 "In r/detrans" --

9 And there's an HTTP address --

10 A. Okay.

11 Q. Okay. You see that.

12 -- "a subreddit for detransitioners to  
13 share their experiences with more than 16,000  
14 members, one can find several stories of people  
15 who call their transgender status into question  
16 after stopping transitioning due to medical  
17 complications or feeling dissatisfied with  
18 their treatment results"?

19 Do you know what a, "Subreddit," is,  
20 Dr. Levine?

21 A. I believe it's just a division of a  
22 larger website where people, you know, with  
23 similar interests.

24 Q. Okay. Do you understand this  
25 sentence to be suggesting that all 16,000 of

1       those members have offered a story of  
2       detransition?

3                   MR. KNEPPER:  Objection, form.

4           A.       I think -- I think it may be true  
5       that either they have offered a personal story  
6       or they're fascinated because of their own  
7       considerations of that story.  They're thinking  
8       about it themselves, which would be in keeping  
9       with the idea that even people who have  
10      transitioned begin to doubt whether they made a  
11      wise decision and they're considering  
12      detransition.  I'm not so sure it means that  
13      all 16,000.  I would have no way of  
14      ascertaining that.  You know, in my worry, I  
15      would lean towards most of them are seriously  
16      considering or have detransitioned.  And in my  
17      skepticism, I would say I'm not sure whether  
18      it's 15,000 or 12,000 or 8,000.

19           Q.       But you have no way to confirm  
20      that --

21           A.       I have no way.

22           Q.       -- if it's all of them or a few of  
23      them or three of them?

24           A.       You're absolutely right.  I have no  
25      way of confirming that.

1 Q. Okay. You can set that aside.

2 Okay. Do you use the DSM-5 in your  
3 clinical practice in any capacity?

4 A. Yes.

5 Q. Okay. Do you discuss it in your  
6 supervision of other clinicians at your  
7 practice?

8 A. Not often but sometimes.

9 Q. Do you have knowledge that  
10 clinicians in your practice use the DSM-5?

11 A. Yes.

12 Q. Okay. And in your teaching as a  
13 clinical professor, do you discuss the DSM-5?

14 A. Sometimes.

15 - - - - -

16 (Thereupon, Deposition Exhibit 18,  
17 DSM-5: Frequently Asked Questions,  
18 was marked for purposes of  
19 identification.)

20 - - - - -

21 Q. Okay. For the record, showing  
22 Dr. Levine what has been marked as Exhibit 18,  
23 a printout from the American Psychiatric  
24 Association entitled, "DSM-5: Frequently Asked  
25 Questions."

1 MR. CHARLES: Did you get a copy?

2 MR. KNEPPER: I did, I did. I for  
3 some reason marked it as Exhibit 17, but I'm  
4 sure you're right. I'll figure it out.

5 MR. CHARLES: Yeah, 17 was the  
6 typology.

7 MR. KNEPPER: Yes. The means I'm  
8 off by one somehow, but I'll figure it out. I  
9 apologize. Go ahead.

10 MR. CHARLES: Okay.

11 BY MR. CHARLES:

12 Q. Dr. Levine, have you seen this  
13 material before?

14 A. I don't think so, not that I  
15 recall --

16 Q. Okay.

17 A. -- this is just published in 2021?

18 Q. Correct. It's a -- well --

19 A. On the back page it says, "2021."

20 Q. Yes, that is correct. It's a  
21 printout from the American Psychiatric  
22 Association, the DSM-5 frequently asked  
23 questions. And you're currently still a fellow  
24 of the American Psychiatric Association, right?

25 A. I'm a distinguished fellow.

1           Q.     I'm sorry. Distinguished fellow.  
2     Thank you. And is that a distinction that  
3     continues in perpetuity like once one receives  
4     that --

5           A.     Unless I do something that's so  
6     terrible.

7           Q.     Okay. My question is: Are there  
8     things you have to do to continue that  
9     distinction?

10          A.     Oh, please don't be impressed.

11          Q.     Okay.

12          A.     If you belong to the APA long  
13     enough, if you've written a paper however the  
14     quality, you know, you get to be a fellow. And  
15     then a distinguished fellow. And if you  
16     survive fifty years, if you don't die of  
17     cancer, you get to be honored for your long  
18     membership. And I don't know what they'll --  
19     soon they'll call me emeritus, I don't know --

20          Q.     Fair enough.

21          A.     -- or they'll call me, The late  
22     Dr. Levine, a distinguished fellow. It's not a  
23     great accomplishment, in other words.

24          Q.     Understood. So returning to this  
25     document here, do you see the heading at the



1 bottom of the page, "What was the process that  
2 led to the new manual?" It should be on the  
3 first page --

4 A. Oh, yeah, yeah.

5 Q. -- I hope. Okay. So then starting  
6 there. "The APA prepared for the revision of  
7 DSM for nearly a decade, with an unprecedented  
8 process of research evaluation that included a  
9 series of white papers and 13 scientific  
10 conferences supported by the National  
11 Institutes of Health. This preparation brought  
12 together almost 400 international scientists  
13 and produced a series of monographs and  
14 peer-reviewed journal articles."

15 Turning to the next page --

16 A. (Witness complies.)

17 Q. -- "The DSM-5 Task Force and Work  
18 Groups, made up of more than 160 world-renowned  
19 clinicians and researchers, reviewed scientific  
20 literature and garnered input from a breadth of  
21 advisors as the basis for proposing draft  
22 criteria.

23 "The APA board of trustees, which  
24 approved the final criteria for DSM-5 on  
25 December 1, appointed a Scientific Review

1 Committee of mental health experts to review  
2 and provide guidance on the strength of  
3 evidence of proposed changes. The Scientific  
4 Review Committee evaluated the strength of the  
5 evidence based on a scientific template of  
6 validators. In addition, the Clinical and  
7 Public Health Committee reviewed proposed  
8 revisions to address difficulties experienced  
9 with the clinical utility, consistency and  
10 public health impact of DSM-IV criteria."

11 A. So you don't misunderstand, when it  
12 says, "December 1," it means December 1, 2012,  
13 because the DSM was issued in the following May  
14 of 2013. This is not --

15 Q. Just before -- I'll let you  
16 continue, but can you just let me know that I  
17 read that accurately?

18 A. You have.

19 Q. Okay. Now, please continue. You  
20 said that was 2012, and that it was released  
21 widely in 2013.

22 A. Right.

23 Q. Okay. So the development of the  
24 DSM includes evaluation of scientific evidence.  
25 Is that right?

1 MR. KNEPPER: Objection, form.

2 A. Yes.

3 Q. Okay. You also make reference in  
4 your report to a statement by Thomas Insel, the  
5 then director of the National Institute of  
6 Mental Health, that it would be reorienting its  
7 research away from the DSM categories. Is that  
8 right?

9 A. Yes.

10 Q. Okay. Do you understand that  
11 Dr. Insel's statement pertained to -- actually,  
12 hold on just a minute. Sorry. You can set  
13 this exhibit aside, Dr. Levine.

14 So with regard to Dr. Insel's statement,  
15 were you aware that two weeks after that  
16 statement you reference, Dr. Insel issued a  
17 joint statement with the APA stating that, "The  
18 APA diagnostic and statistical manual of mental  
19 disorders along with ICD represents the best  
20 information currently available for clinical  
21 diagnosis of mental disorders"?

22 A. I was aware of that. I was aware  
23 of the political storm that occurred when  
24 Dr. Insel made his report two weeks earlier.  
25 And actually, Dr. Insel did not change his

1 research priorities for the National Institutes  
2 of Mental Health, but he needed to quell the  
3 storm coming from the APA, which was  
4 considerable, by modifying and making the  
5 statement that you just said.

6 I think Dr. Insel was making -- was  
7 saying that all this, quote, scientific  
8 process, quote, scientific process, really  
9 established the interreliable -- interrater  
10 reliability of psychiatric diagnoses, not the  
11 validity of psychiatric diagnoses. And he was  
12 interested in figuring out the biological  
13 background and causes and consequences of  
14 mental illness.

15 And in his view, the NIH put more  
16 emphasis on the symptoms of people who are  
17 mentally ill. And he noted that, for example,  
18 anxiety and depression are part of almost every  
19 psychiatric diagnosis, even though we sometimes  
20 call things, "Anxiety disorders." And he said,  
21 we needed -- he used an example, I believe of  
22 catatonia in that he wanted to know the  
23 mechanisms of catatonia. I don't think I need  
24 to explain that to you, just that that's a  
25 psychiatric condition where people can't move.

1           And he said that must have a neurobiology  
2           and you can see catatonia in various  
3           psychiatric diagnoses. So he wants to figure  
4           out the mechanism of catatonia, not when people  
5           are depressed and catatonic versus when people  
6           are schizophrenic and catatonic or when they  
7           just found out their mother died and they're  
8           catatonic. So that's sort of the kind of thing  
9           that was going on back in May and June of 2013,  
10          and it was quickly fixed from a public  
11          relations point of view. Less you think  
12          psychiatry is free of political influences, I  
13          want to emphasize what I just said.

14                Q.       Thank you. So you mentioned that  
15          Dr. Insel was interested in understanding  
16          components of -- conditions related to brain  
17          structure or neuro origination?

18                A.       He would be interested in anything  
19          about the brain, whether it's the anatomy or  
20          structure of the brain or whether it's the  
21          activity of the brain or the biochemistry of  
22          the brain or the electrolyte milieu of the  
23          blood circulating through the brain and the  
24          blood brain barrier and how genes are turned on  
25          and off and affect brain function. That would

1 be called, as you said, neuroscience.

2 Q. Is it fair to say you understood  
3 his statement -- his initial statement, not the  
4 joint statement that came out later, his  
5 initial statement pertained to the research  
6 domain criteria project and its goal to  
7 understand mental illness as disorders of brain  
8 structure and function that implicate specific  
9 domains of cognition, emotion, behavior?

10 A. Yes.

11 MR. KNEPPER: Objection, form.

12 MR. CHARLES: Okay. Just pausing.  
13 I did mis-number an exhibit. There was an  
14 exhibit I numbered that I did not introduce.  
15 So that's why you're off --

16 MR. KNEPPER: That's fine.

17 MR. CHARLES: -- so I will try to  
18 figure out how to remedy that.

19 MR. KNEPPER: We can also  
20 stipulate that there is no such exhibit. I  
21 often lose track, so I thought it was me. And  
22 to find out that it's not is great -- I thought  
23 it was only me. To find out it was not only me  
24 is a great relief.

25 MR. CHARLES: All right. I'll keep

1           going.

2                       MR. KNEPPER: We can fix it later.

3                       MR. CHARLES: Okay.

4           BY MR. CHARLES:

5                       Q. All right. Dr. Levine, if you  
6           would please turn in your report, your report,  
7           which I think is still in front of you, to  
8           page 49. Just let me know when you've got  
9           there.

10                      A. I'm there.

11                      Q. Okay. And beginning at  
12           paragraph 66, you're discussing the 2009 and  
13           then the 2017 Endocrine Society guidelines,  
14           right, in that paragraph?

15                      A. Yes.

16                      Q. Okay. Do the Endocrine Society  
17           guidelines require that any child treated with  
18           puberty delaying medications must later receive  
19           hormones?

20                      A. No.

21                      Q. Okay. Do the Endocrine Society  
22           guidelines supersede a clinician's careful  
23           judgment or assessment of a patient in their  
24           care?

25                      A. No.

1           Q.     And are the Endocrine Society  
2     guidelines published in a peer-reviewed  
3     journal?

4           A.     They may be published in a  
5     peer-reviewed journal, but when institutions  
6     like the Society -- I doubt very much they're  
7     peer reviewed. They're thought to be peer  
8     reviewed by the society itself; that is, it's a  
9     consensus document based on a lot of work of a  
10    committee. So they publish it and then some  
11    journal says, That's good enough for me. It's  
12    not like they have independent endocrinologists  
13    looking at the guidelines. That's what I  
14    suspect, but I cannot say that with certainty.

15          Q.     Okay. So you're not -- that's your  
16    suspicion, but you can't confirm that the  
17    guidelines were not --

18          A.     Well, I've just seen -- I've seen  
19    guidelines get published very quickly --

20          Q.     Understood.

21          A.     -- and I've been told that this  
22    will get published in -- you know, if I write  
23    this and so it gets published.

24          Q.     So with regard to these guidelines  
25    specifically, though, you're not aware that



1       they weren't peer reviewed before they were  
2       published in a peer-reviewed source?

3               A.       I am aware that other  
4       endocrinologists are horrified by these  
5       guidelines and have complained about the lack  
6       of -- they wondered how they got published.

7               Q.       But you're not aware --

8               A.       I am not aware that this is peer  
9       reviewed or not peer reviewed.

10              -   -   -   -   -

11              (Thereupon, Deposition Exhibit 19,  
12              "Endocrine Treatment of  
13              Gender-Dysphoric/Gender-Incongruent  
14              Persons: An Endocrine Society  
15              Clinical Practice Guideline,"  
16              Article, was marked for purposes of  
17              identification.)

18              -   -   -   -   -

19              Q.       Okay. For the record, I'm marking  
20       Exhibit 19. "Endocrine Treatment of  
21       Gender-Dysphoric/Gender-Incongruent Persons: An  
22       Endocrine Society Clinical Practice Guideline,"  
23       2017. Okay. So in this paragraph -- or really  
24       just now in your testimony, Dr. Levine, you  
25       critiqued the evidence in the most recent

1 Endocrine Society guidelines, correct?

2 A. What was the first part of your  
3 question? Did I critique it?

4 Q. The quality of evidence.

5 A. Well, it's not my critique of the  
6 quality of evidence. It's their critique of  
7 the quality of evidence. I think you need to  
8 emphasize that. They're the ones that said  
9 it's a low quality evidence throughout. That's  
10 the whole idea throughout this paper, is that  
11 they're assessing, we have a rank order about  
12 what is -- we have a hierarchy of  
13 evidence-based medicine in medicine. And we  
14 have what is low quality.

15 For example, my opinion is the lowest --  
16 the expert opinion is the lowest level on the  
17 hierarchy of trustworthy scientific  
18 information. So this represents -- and not  
19 only a set of recommendations but an evaluation  
20 of a grading of the degree of certainty about  
21 the scientific basis of these recommendations.  
22 Even though there's a low quality to these  
23 recommendations on the part of the  
24 endocrinologist, because they do know something  
25 about science, they still persist in

1 recommending if you're going to treat -- if you  
2 decide to treat, this is how you treat.

3 Q. I see. Okay. So taking a look  
4 here at Exhibit 19. Do you recognize this  
5 material?

6 A. I do.

7 Q. Okay. So this is the, "Endocrine  
8 Treatment of Gender-Dysphoric/Gender-  
9 Incongruent Persons," as released by the,  
10 "Endocrine Society Clinical Practice  
11 Guideline."

12 A. Yes.

13 Q. Okay. So would you agree that as  
14 listed in this guideline and -- well, as listed  
15 in this guideline that 1, by its very nature,  
16 has better support than a 2 recommendation?

17 A. No. I would have to consult the  
18 grading system whether like 5 is better than 1  
19 or 1 is better than 5.

20 Q. And what is the grade system?

21 A. Well, I'm sure it's listed in  
22 here --

23 Q. Okay.

24 A. -- I don't remember it offhand.  
25 You see, there's a number and then there's a

1 line and then there's a circle and they're  
2 either filled in or not filled in on page 3871?

3 Q. Yes.

4 A. So these are the grading systems.  
5 And some things are ungraded and some things  
6 are graded. You know, I probably -- I probably  
7 once knew the answer to whether 1 is best or --  
8 I would presume 1 is the least, but we would  
9 have to find their system. It's too detailed  
10 for my aging brain to remember. But the point  
11 is that the endocrinologists themselves and the  
12 people who review the state of science have all  
13 agreed. It's not like people like me think  
14 that the quality of the science is low.

15 The people at WPATH know that the quality  
16 of their science is low. And the people at  
17 WPATH know that -- wish they had controlled  
18 studies, randomized controlled studies. And  
19 the people in this field like myself but who  
20 are even more in the field, they wish they had  
21 excellent followup studies. It's not like  
22 these endocrinologists think that they're  
23 absolutely certain that this is the right thing  
24 to do and what the outcome of their treatments  
25 are. They don't know what the outcome of their

1 treatments are. So if you just take an example  
2 from this document --

3 Q. Okay. If you'll just pause for  
4 just a moment, Dr. Levine. I want to give you  
5 one other document to look at alongside that  
6 one.

7 - - - - -

8 (Thereupon, Deposition Exhibit 20,  
9 "Pediatric Obesity-Assessment,  
10 Treatment, and Prevention: An  
11 Endocrine Society Clinical Practice  
12 Guideline," Article, was marked for  
13 purposes of identification.)

14 - - - - -

15 Q. Okay. So for the record, I'm  
16 marking Exhibit -- or I'm introducing to  
17 Dr. Levine what has been marked as Exhibit 20  
18 entitled, "Pediatric Obesity-Assessment,  
19 Treatment, and Prevention: An Endocrine Society  
20 Clinical Practice Guideline."

21 Okay. Looking at the first document, the  
22 Endocrine Society Clinical Practice Guideline  
23 for the Treatment of Gender-Dysphoric and  
24 Incongruent Persons. Could we -- would you be  
25 willing to assume that the, "1," next to some

1 of the recommendations means that that is a  
2 high recommendation?

3 MR. KNEPPER: Objection, form.

4 A. I am not. Until we find out the  
5 key, I'm not willing to make any assumptions.

6 Q. Okay. So then let's take a look at  
7 the second document, "Pediatric Obesity-  
8 Assessment, Treatment, and Prevention: An  
9 Endocrine Society Clinical Practice Guideline."  
10 Have you seen this document before?

11 A. Never.

12 Q. Okay. So let's first look at this  
13 document. If you'll just turn to page 711.

14 A. Okay.

15 Q. Actually, I'm sorry. Let's go to  
16 page 722 looking at the paragraph marked 3.2.  
17 It's on the right-hand side, the second column.

18 A. Yes.

19 Q. Okay. So 3.2 states, "We recommend  
20 that clinicians prescribe and support healthy  
21 eating habits such as:

22 "Avoiding the consumption of  
23 calorie-dense nutrient-poor foods..."

24 And then the second bullet point,  
25 "Encouraging the consumption of whole fruits

1       rather than fruit juices."

2               Did I read that correctly?

3               A.       Yes.

4               Q.       Okay. And do you see next to that  
5       recommendation a number, "1," and two of the  
6       four circles have been marked with a cross  
7       through them?

8               A.       Yes.

9               Q.       Okay. So keeping that in mind,  
10       let's turn back to the other document and  
11       please turn to page 3881.

12              A.       81?

13              Q.       3881. Then if you look on the  
14       right-hand side, the second column that is --  
15       I'm looking at what's been labeled 2.3 --

16              A.       I see it --

17              Q.       -- do you see that?

18              A.       I see it -- it has the same signal.

19              Q.       It does. So it means something.

20              A.       We don't know what it means, but it  
21       means something --

22              Q.       Yeah, so I'll go ahead and read  
23       that.

24              A.       -- we can establish it means  
25       something.

1           Q.     I'll go ahead and read that. It  
2     says, "We recommend that, where indicated, GnRH  
3     analogues are used" -- oh, I'm sorry. Do you  
4     see that there?

5           A.     I do.

6           Q.     Okay.

7           -- "GnHR analogues are used to suppress  
8     pubertal hormones."

9           So is, "GnRH" -- what is, "GnRH"? Are  
10    you familiar with that term?

11          A.     I am.

12          Q.     Okay. What does that mean or what  
13    is that referring to?

14          A.     Gonadotropin-releasing hormones.

15          Q.     Commonly referred to as, puberty  
16    delaying medication?

17          A.     Puberty blockers, whatever.

18          Q.     Okay. So would you say that it  
19    appears there are other Endocrine Society  
20    guidelines that offer the same level of  
21    recommendation and quality of evidence as the  
22    Endocrine Society treatment guidelines for  
23    gender dysphoric persons?

24                 MR. KNEPPER: Objection, form.

25          A.     Yes. They're all low -- yes, low



1       quality evidence. We recommend that where  
2       indicated -- now, you see, where indicated goes  
3       back to writing a letter of support for hormone  
4       treatment. And the endocrinologist may not  
5       feel secure enough to make the decision by him  
6       or herself and wants a letter from a mental  
7       health professional to say, you take  
8       responsibility, I recommend -- you take ethical  
9       responsibility for giving this kid. I  
10      recommend -- I'll take ethical responsibility  
11      that I think this is a good idea to put this 11  
12      year old, this 10 or 1 child, 10 or 2 child on  
13      hormones.

14               So the endocrinologist, per se, may or  
15      may not require of such a letter, but most of  
16      them I know would love a letter because that  
17      takes them off the ethical hook. The  
18      psychiatrist said it's appropriate to do this,  
19      so it's indicated. The endocrinologists  
20      themselves are not equipped to evaluate the  
21      developmental history and the different  
22      diagnosis and the defensive nature of some  
23      cross-gender identifications. And so, you see,  
24      there's a qualification in that sentence and  
25      you must understand that qualification,

1       although just reading it, you wouldn't.

2       Hopefully a doctor would understand it.

3               Q.       So the strength of the  
4       recommendation and the quality of the evidence  
5       supporting this guideline -- the guideline  
6       pertaining to healthy eating habits -- is the  
7       same as the strength of the recommendation for  
8       the quality of evidence that puberty blockers  
9       be used for treatment of gender dysphoria in  
10      adolescents?

11              MR. KNEPPER:  Objection, form.

12              A.       Just think, we have a very  
13      overweight child and we don't need more  
14      evidence that obesity is not good for long-term  
15      health, you see.  So we don't need a lot of  
16      evidence to say, tell the children not to drink  
17      Coca-Cola.  It makes a lot of sense to even  
18      parents; don't drink sugar infused drinks.  
19      Now, we're talking about changing a person's  
20      life dramatically when indicated needs a mental  
21      health professional to say, I think this is a  
22      good idea, I believe that trans people can live  
23      happily ever after and they don't have  
24      increased mortality.  When indicated -- that's  
25      what when indicated need to think about.

1           When I'm reassured that I'm doing the  
2           right thing by a mental health professional  
3           whom I recognize may know more about the  
4           development of the human soul and the human  
5           psyche than I do. You're aware in my report  
6           that I quoted somebody, a Dutch person whose  
7           name I can't pronounce -- it starts with a V --  
8           that was a survey of pediatric endocrinologists  
9           expressing a series of unanswered questions  
10          that made them feel uneasy.

11           Q.     Can you turn to, Dr. Levine, for me  
12          to page 58 in your report, please.

13           A.     Page?

14                   - - - - -

15                   (Thereupon, Deposition Exhibit 21,  
16                   "Practice Parameter on Gay, Lesbian,  
17                   or Bisexual Sexual Orientation,  
18                   Gender Nonconformity, and Gender  
19                   Discordance in Children and  
20                   Adolescents," Article, was marked  
21                   for purposes of identification.)

22                   - - - - -

23           Q.     I'm sorry. Page 56, page 56.

24           A.     Page 56. Here, we are.

25           Q.     So first looking at your report,

1 Dr. Levine -- or actually, let me start with  
2 the exhibit. So for the record, I've shown  
3 Dr. Levine what has been marked as Exhibit 21,  
4 the, "Practice Parameter on Gay, Lesbian, or  
5 Bisexual Sexual Orientation, Gender  
6 Nonconformity, and Gender Discordance in  
7 Children and Adolescents." Have you seen this  
8 document before, Dr. Levine?

9 A. I don't think so. I don't recall.

10 Q. Okay. Could you -- so you're not  
11 sure if you've seen this before, Dr. Levine?

12 A. Yes, I'm not certain.

13 Q. Okay. Okay. You can go ahead and  
14 set that aside.

15 Okay. Could a mental health provider  
16 refusing to provide appropriate -- sorry. Let  
17 me back up here. Could a mental healthcare  
18 provider who refuses to provide gender  
19 affirming treatment to a person suffering from  
20 gender dysphoria do harm to them?

21 MR. KNEPPER: Objection, form.

22 A. They certainly could disappointment  
23 the person, if the person wanted gender  
24 affirming care such as I recommend, and I'm  
25 optimistic you can change your gender safely

1       where hormones are safe and surgery is a good  
2       thing to do. If a person said that, you know,  
3       skeptically, I think that would disappoint  
4       certain patients, but how it was said and when  
5       it was said in response to what would either  
6       determine whether the person is engaged with  
7       the mental health professional or leaves the  
8       mental health professional. You know, all  
9       mental health professionals are not created  
10      equal.

11             Q.       So it sounds like you're saying it  
12      could do harm to that patient?

13                    MR. KNEPPER: Objection, form.

14             A.       No, I'm not saying that. I'm  
15      saying it could be disappointing to that  
16      person. What that person did with the  
17      disappointment may prove harmful just because  
18      of that person or it may prove in fact  
19      beneficial.

20             Q.       Are you satisfied -- let's orient  
21      this question around the patients you've seen  
22      in the last 12 months. Are you satisfied that  
23      those patients -- actually, sorry. Let me  
24      start over. Are you satisfied that the  
25      patients you have seen historically for whom

1       you provide letters of authorization for  
2       hormones give sufficiently informed consent?

3               MR. KNEPPER:  Objection, form.

4               A.       From my point of view, I did what I  
5       could to reach the standard of having the  
6       person internalize and think about, digest,  
7       dream about and come back and talk to me about  
8       it.  That's all I can do.  I can't guarantee  
9       that if I do what I do that it's going to  
10      change your mind or help you steer your ship in  
11      a slightly different angle --

12              Q.       So --

13              A.       -- so I would not write a letter of  
14      recommendation if I didn't feel like I did my  
15      part.  And if the person indicated that they  
16      couldn't pay attention to me, I wouldn't write  
17      the letter.

18              MR. CHARLES:  Understood.

19              Okay.  John, finished.

20              MR. KNEPPER:  You're finished?

21              MR. CHARLES:  I mean, barring --

22              MR. KNEPPER:  Barring --

23              MR. CHARLES:  We can't tell the  
24      future.

25              MR. KNEPPER:  I wasn't ready for

1       that but, great. Why don't we take a 10-minute  
2       break.

3                   MR. CHARLES: Okay.

4                   MR. KNEPPER: I will be back here  
5       at 4:45.

6                   VIDEOGRAPHER: Off the record 4:36.

7                   (Recess taken.)

8                   VIDEOGRAPHER: On the record 4:50.

9                   EXAMINATION OF DAVID MADIGAN, PH.D.

10          BY MR. KNEPPER.

11               Q.     Dr. Levine, could you please obtain  
12       Exhibit 2 for me, please.

13               A.     (Witness complies.)

14               Q.     If you could turn to page 150.

15               A.     So 143, 145, 184, 152. Wait a  
16       second. We may be there. 154. 150. No.  
17       That's 151. Here's 150, yeah.

18               Q.     Do you remember earlier in the  
19       deposition when Mr. Charles read a portion of  
20       it?

21               A.     Yes.

22               Q.     Do you remember that Mr. Charles  
23       stopped reading at line 5 at the sentence, "It  
24       doesn't justify it" --

25               A.     Yes --

1 Q. -- is that correct?

2 A. -- he did. I think so, yeah.

3 Q. And does the deposition have the  
4 remainder of that paragraph and two following  
5 paragraphs of testimony by you?

6 A. Yes.

7 Q. Are there other statements from  
8 those paragraphs that you feel need to be read  
9 into the record to explain your thinking?

10 MR. CHARLES: Object to form.

11 A. I said it in this document, that I  
12 was just trying to say, please, understand me,  
13 I understand the social policy or  
14 organizational policy or institutional medical  
15 policy is very different than the subject of  
16 medical science. It's very important I believe  
17 as an educator and an advisor of the young to  
18 embrace controversy, not to hide from it.  
19 Controversy is actually how medicine advances,  
20 because you think one thing. I think another.  
21 And science says, now prove it.

22 And then we establish a scientific study  
23 and we gather further evidence to support your  
24 position or to refute my position. And so I  
25 try to tell people -- I just wrote a book for



1        mental health professionals. And in chapter 7  
2        of my book, which is the chapter devoted I  
3        think to gender dysphoria, I said, Please see  
4        what the controversies are, don't run from  
5        them, don't take a side, don't become simply an  
6        advocate but understand both sides of the  
7        controversy. And perhaps you can pay attention  
8        to the future scientific accomplishments that  
9        help answer the controversy.

10                So I say, all this storm, all this  
11        disagreement, it becomes -- it arises only  
12        because of the limitations of science. We  
13        wouldn't be -- we wouldn't be here today if  
14        science had done its job. And so the passion  
15        is not because, oh, you're a passionate person  
16        or I'm a passionate person and the other side.  
17        What we're saying is, all this passion comes  
18        about because we don't have the information.  
19        And if you're starting your career beware of  
20        passion. Medicine generally doesn't produce  
21        passion. It's very unusual in medicine to have  
22        as much passion about any subject as there  
23        exists in the trans world. That should be  
24        suspicious.

25                We should all be suspicious of this

1 passion. Why is there so much passion. We  
2 don't know what to do whether we should do  
3 surgery on a heart that has had a myocardial  
4 infarction or we should give medication.  
5 People are not having advocacy groups and  
6 fighting each other and calling each other  
7 names. We do a study and we figure out which  
8 is better, you see. But here we've got so  
9 much -- we have a cultural war going on and  
10 it's because science hasn't done its job. And  
11 until science does its job, the war is going to  
12 continue.

13 And people on either side are not bad  
14 human beings. They disagree, but they don't  
15 have the evidence to support their position.  
16 So that's why I said -- you know, you asked me  
17 a question, does the lack of consensus justify  
18 a categorical ban. You can force me into a,  
19 "Yes," or, "No," answer, but this larger thing  
20 that follows on page 150 is what I want to  
21 convey to the Court or the three of you. I'm  
22 sorry. That's too long-winded.

23 Q. No. Could you turn to page 87 of  
24 your expert report. That's Exhibit 1.

25 A. Oh, my expert report.

1 Q. Yes.

2 A. Are we done with this?

3 (Indicating.)

4 Q. Yes.

5 A. I guess I'm not listening very  
6 well.

7 Q. You're all right.

8 A. 82?

9 Q. 87, paragraph 122.

10 A. Okay.

11 Q. Do you see the portion of that  
12 report that says, "Summary Opinions"?

13 A. Yes.

14 Q. Okay. Is it your view that there  
15 are no long-term, peer-reviewed published  
16 credible, reliable and valid research studies  
17 documenting or establishing, one, the  
18 percentage of patients receiving gender  
19 transition procedures who are helped by such  
20 procedures according to well known criteria?

21 A. Yes, I believe that.

22 Q. Two, that the percentage of  
23 patients receiving gender transition procedures  
24 who are harmed by such procedures, according to  
25 well known criteria, is not known through

1 long-term, peer-reviewed, published, credible,  
2 reliable and valid research studies?

3 A. Yes, that's what I believe --

4 MR. CHARLES: Objection, form.

5 A. -- that's what I'm telling the  
6 Court.

7 Q. Do you believe that there are no  
8 long-term, peer-reviewed published, credible,  
9 reliable and valid research studies documenting  
10 or establishing the reliability and validity of  
11 assessing gender identity by relying solely  
12 upon the expressed desires of a patient?

13 A. Yes.

14 Q. Do you believe that there are no  
15 long-term, peer-reviewed published, credible,  
16 reliable and valid research studies documenting  
17 or establishing the mental health outcomes of  
18 trans behaving children who are either affirmed  
19 or not affirmed during childhood?

20 A. Absolutely, yes.

21 Q. Do you believe that there are no  
22 long-term, peer-reviewed published, credible,  
23 reliable and valid research studies documenting  
24 or establishing the percentage of various types  
25 of childhood functional challenges and

1 psychiatric diseases of trans identified  
2 children?

3 A. I do believe that. Trans  
4 identified children often get a diagnosis of  
5 gender dysphoria and that becomes the issue.  
6 But in terms of follow up, the issue also is  
7 what happens to them in terms of depression,  
8 substance abuse, suicidal ideation, academic  
9 success and social success. And so that's why  
10 I endorse E. as you read it.

11 Q. Is it your opinion that there are  
12 no long-term, peer-reviewed published,  
13 credible, reliable and valid research studies  
14 documenting or establishing the percentage of  
15 patients whose new trans identity has been  
16 created by involvement in social media?

17 A. Yes, I agree, but it's really not  
18 created or not created. It's had an influence  
19 in the creation. I believe that it has had a  
20 major influence in the creation, but I can't  
21 really say that it's been solely created by  
22 that. There probably is a vulnerability to a  
23 child who is so influenced. And we need to  
24 remember that 50 percent of the children that  
25 are evaluated in recent years have a diagnosis

1 of autism. And autism in children is  
2 associated with social -- being not part of a  
3 social group and enormous social anxiety and  
4 the feelings that one is not an adequate  
5 person.

6 And so many of these people are very  
7 heavily dependent on the computer and all of  
8 their friendships are virtual, all their  
9 activities are in their room with the computer.  
10 And so those are the particular people whose  
11 vulnerabilities that I worry about, that they  
12 get a diagnosis -- they give a self label and  
13 then they create their own dysphoria about  
14 their bodies, but they failed socially by no --  
15 they're not -- they're not at fault personally  
16 because they're autistic.

17 You know, autism is a pre -- you know,  
18 it's a biologic, developmental neurobiological  
19 abnormality with social consequences and  
20 cognitive consequences. So I think, you know,  
21 when we just talk about trans adolescents and  
22 we don't make mention to the fact that 50  
23 percent of them are neuro atypical and 70  
24 percent of them in many, many studies, in most  
25 studies have a recognized psychiatric past

1 history and current psychiatric diagnosis, it's  
2 more complicated than just the internet.

3 But we need to understand who these  
4 children are and how they're different from  
5 their peers and what we could possibly do to  
6 help them to have a better life. I know some  
7 of the conversation today was, we'll help them  
8 have a better life by giving them puberty  
9 blocking hormones, but that doesn't address --  
10 I think it has a risk of harming them further.  
11 And it doesn't address the comorbid  
12 developmental challenges that these children  
13 face.

14 And I'm afraid -- and it's controversial,  
15 because I don't have the answer. I'm afraid  
16 there's a possibility we're making these  
17 children have a worse outcome. And until you  
18 can demonstrate to me in a very careful  
19 controlled study that separates the autistic  
20 from the non-autistic, you see? That separates  
21 the kids who come from a family that's intact  
22 from a family where there's a single parent.  
23 Where you can separate the kids who were  
24 sexually abused from the kids who were not  
25 sexually abused. I'm not sure puberty blocking

1 hormones ought to be blanketly applied because  
2 the kid is gender dysphoric.

3 So I agree that -- the percentage of  
4 people whose new trans identity has been  
5 created by environment and social media, I  
6 agree, yes, but I dislike that caveat. I just  
7 want everyone to know, this is a great  
8 complexity and let's not simplify it by one god  
9 damn diagnosis because people generally don't  
10 have one diagnosis.

11 Q. Do you consider the use of puberty  
12 blocking pharmaceuticals to treat gender  
13 dysphoria to be experimental?

14 MR. CHARLES: Object to form.

15 A. Oh, yes.

16 Q. Do you consider the use of  
17 cross-sex hormones to treat gender dysphoria to  
18 be experimental?

19 MR. CHARLES: Object to form.

20 Q. You can answer.

21 A. Yes, in the sense that we haven't  
22 really done -- it's putting the treatment  
23 before the science and therefore it's  
24 experimental. I know the argument it's not  
25 experimental because it's been done with



1 thousands of patients; therefore, it's not  
2 experimental. But that's an argument; it's  
3 true, it's been given to thousands of patients,  
4 but that doesn't answer the question: What's  
5 the impact of this, the medical impact, the  
6 social impact, the psychological impact, the  
7 vocational, the educational and the long-term  
8 health impact of it.

9 Now, when Mr. Charles was asking me  
10 questions about mortality and morbidity, I said  
11 there was another study I couldn't remember and  
12 there just is -- I just found it on the  
13 internet. It's a study -- it's called,  
14 "Mortality Trends Over Five Decades in Adult  
15 Transgender People Receiving Hormone Treatment,  
16 a report from the Amsterdam Cohort of Gender  
17 Dysphoria." And the author is something like  
18 D -- let me see if I can find it. Anyway,  
19 DeBlok, D-e, capital, B-l-o-k and et al.

20 Q. And where was that study published,  
21 Dr. Levine?

22 A. This is in Lancet --

23 Q. And when was it published?

24 A. -- it's a British journal, Lancet.

25 Q. And when was it published?

1           A.       It was just published 2021. I  
2       don't know what month. I just became aware of  
3       it. But I think -- I mean, I just really read  
4       it quickly. The mortality rate, the death rate  
5       from all causes, not suicide alone, all causes.  
6       Cardiovascular disease and cancer particularly  
7       is double, double. So to me there's no  
8       question. You see, there's no question that  
9       the trans community generally has unfortunate  
10      to look forward to not a full life span, given  
11      their country, whatever the life span of their  
12      country is.

13                So when we talk about a 6 year old or 11  
14      year old or 15 year old being given these  
15      puberty blockers or hormones or having their  
16      breasts removed or can't wait to have my  
17      genitals redesigned when I'm 21 or whatever it  
18      is, I'm aware of the data on the health of  
19      operated upon hormonally treated patients. I'm  
20      aware of that. And I sit there in my office  
21      worrying about the long-term implications of  
22      this child or this teenager or this adult. And  
23      that's why I emphasize so much informed  
24      consent.

25                It's possible that you can't give true

1 informed consent to a 15 year old. They can't  
2 tolerate the idea. They're certain. You know,  
3 adolescents are certain about things and you  
4 can't convince them. I don't want to bring up  
5 the antivaxxers for a minute, because some  
6 people don't outgrow that.

7 Q. I do have to get a flight, so I  
8 have to -- I don't want to spend too long. I  
9 did want to tie that back a little bit, though,  
10 because -- I'll come back to that question.  
11 Actually, I'll stay there and then I'll move to  
12 surgery. I'm going to ask you the same  
13 question whether surgery is experimental in a  
14 second. But there was a comment in a passage  
15 from a prior deposition where you said that one  
16 of the things you wanted to determine was  
17 whether the parents of an adolescent presenting  
18 as transgender were homophobic. Is that  
19 correct?

20 A. Yes.

21 Q. Why were you concerned about the  
22 possibility that parents might be homophobic?

23 A. Because the child may starting at  
24 about age 10 beginning to have homoerotic  
25 attractions and may be fascinated with certain

1 boys or girls if they're of the same sex. And  
2 they recognize this as, this is a terrible sin  
3 in their religious background, in their  
4 parental values background listening to their  
5 father and mother talk about, "Gay people, we  
6 ought to kill those gay people," you know, the  
7 child has big ears, takes it in. And the child  
8 may become trans in order to avoid being gay.

9 And my great concern about all of this  
10 treatment of children is that in some way it's  
11 trying to convert children from being gay.  
12 It's trying to stop them from being gay, giving  
13 them an alternative. And to me that's, wow,  
14 that seems like a terrible thing to do.

15 Q. Do you have the same concerns about  
16 morbidity in the gay community that you do  
17 about the early mortality of transgender  
18 individuals?

19 MR. CHARLES: Object to form.

20 A. The measures of community distress  
21 like mortality are about 50 percent in the gay  
22 and lesbian community; that is, it's twice as  
23 much in the trans community than it is known in  
24 the gay community. And in the recent New  
25 England Journal of Medicine article about

1 substance abuse, they didn't distinguish  
2 between trans and -- statistically, but other  
3 studies have indicated that everything else,  
4 like suicide in the last thirty days, thinking  
5 about suicide in the last thirty days, making a  
6 suicide attempt, substance abuse, it's all  
7 higher in the trans community.

8 It's not low in sexual minority  
9 communities. Either is domestic violence in  
10 either of those communities, but it's much less  
11 in the trans -- in the lesbian and gay  
12 community than it is in the straight -- in the  
13 trans community. And it's even less in the  
14 straight community, but obviously we have these  
15 same problems in the straight community, the  
16 cis gender community.

17 Q. Return to the question. Do you  
18 consider surgery for the treatment of gender  
19 dysphoria to be experimental?

20 MR. CHARLES: I object to form.

21 A. I have the same answer that I had  
22 to the hormonal question and for the same  
23 reasons.

24 Q. Do all transgender people suffer  
25 from a gender dysphoria?

1 A. No.

2 Q. Are there any studies or  
3 scientifically valid research that indicates  
4 what percentage of transgender people suffer  
5 from gender dysphoria?

6 MR. CHARLES: Object to form.

7 A. What percentage of transgender  
8 people suffer from gender dysphoria? I don't  
9 think -- I can't recall a study that asks that  
10 question and use -- and had numbers to explain  
11 the answer. People like myself get to see  
12 individuals who are transgender but not  
13 dysphoric or who are dysphoric but not  
14 transgender.

15 Q. That was going to be my followup  
16 question. Are there people who are dysphoric  
17 who are not transgender?

18 A. Oh, yes. Oh, yes. Many years ago,  
19 before I ever got involved with any lawyer  
20 about these issues, I remember recommending to  
21 a group of alcohol specialists that they ought  
22 to look at the gender identity -- they ought to  
23 ask questions about the sexual identity of the  
24 people being treated for substance abuse and  
25 alcoholism. Because in my limited clinical

1 experience, I've run into -- I keep running  
2 into people who presented with substance abuse  
3 and really dangerous degrees of substance abuse  
4 that would get them hospitalized.

5 And then when I talked to them, they tell  
6 me stories about their hidden gender dysphoria  
7 or their struggles about -- let me just take a  
8 man, for example -- the struggles about the  
9 sense that they have that they're feminine and  
10 they can't -- they have feminine interests,  
11 they have feminine interests but social -- and  
12 they have a sense of themselves as more  
13 feminine than masculine and yet they are too  
14 afraid to show it and then they drink  
15 themselves into hepatitis or whatever.

16 Q. But you would not consider those  
17 individuals to be transgender?

18 A. Well, they don't call themselves  
19 transgender. They present themselves as cis  
20 gender people.

21 MR. KNEPPER: That's all I have.  
22 Carl, do you have any follow up?

23 MR. CHARLES: What time is your  
24 flight?

25 MR. KNEPPER: 7:15.

1 MR. CHARLES: So we're going to  
2 take a nine-minute break.

3 MR. KNEPPER: That's fine.

4 VIDEOGRAPHER: Off the record 5:12.

5 (Recess taken.)

6 VIDEOGRAPHER: On the record 5:17.

7 MR. KNEPPER: Alan, I'm confirming  
8 that you have no questions for this witness.

9 THE WITNESS: I heard him say  
10 before he has no questions.

11 MR. KNEPPER: Once again, Alan, do  
12 you have any questions for this witness?

13 Well, go ahead, Mr. Charles.

14 MR. CHARLES: Okay.

15 EXAMINATION OF STEPHEN B. LEVINE, M.D.

16 BY MR. CHARLES:

17 Q. Dr. Levine, how many autistic  
18 individuals who have been diagnosed with gender  
19 dysphoria have you treated in your clinical  
20 practice?

21 A. I would say, in the last two  
22 years, 90 percent of the people who have had  
23 neuro atypical backgrounds and one -- one who  
24 doesn't, I'm strongly suspicious does.

25 Q. So if you could break down 90



1       percent for me, because 90 percent could be 1  
2       of 2.

3               A.       No, no. I mean about 10, 12  
4       people. The last people I've seen in this age  
5       group, I would say, at least 50 percent. I  
6       just had a conversation and it's (inaudible) --

7               Q.       Oh, okay.

8               A.       -- at the minimum 50 percent, but I  
9       think it's much higher.

10              Q.       Okay. And those 50 percent have a  
11      neuro typical diagnosis that you're aware --

12              A.       No. Atypical.

13              Q.       I'm sorry. Atypical.

14              A.       What about that?

15              Q.       That estimated 50 percent, you said  
16      they have -- I'm sorry -- do they have an  
17      atypical diagnosis of some kind?

18              A.       Yes. This is not just my  
19      experience. This is not just my experience.

20              Q.       I know, but I'm only asking about  
21      your experience.

22              A.       But, see, it's helpful when my  
23      experience corresponds to international experts  
24      having the same kind of experience.

25              Q.       I'm just asking about the patients

1       you see in your practice.

2               A.       Yes, they -- they come to me, but  
3       their parents tell me that they were diagnosed  
4       at 6 or 8 or whatever with autism --

5               Q.       Okay.

6               A.       -- sometimes it's referred to as  
7       Asperger's.

8               Q.       Okay. Is it your opinion that  
9       there is greater societal acceptance of trans  
10      individuals as opposed to gay individuals?

11              A.       No.

12              Q.       Okay. So why do you believe a  
13      child would become transgender to avoid  
14      parental disapproval of homosexuality?

15              A.       Because children want to please  
16      their parents, because some parents are really  
17      antigay. And I've had a parent say, "I'd  
18      rather have my kid dead than gay." I couldn't  
19      believe that.

20              Q.       You think those same parents would  
21      be happy to have a trans child?

22              A.       I don't -- no, I don't think people  
23      are happy to have a trans child. It's an  
24      internal developmental creative thing to  
25      declare oneself to be trans. And the child

1 does not know all the forces that have shaped  
2 that decision, you see, but there are social  
3 forces impinging on every child.

4 Q. Understood. But you said that some  
5 children would opt for a transgender identity  
6 because of perceived disapproval by their  
7 parents of homosexuality.

8 A. Yes.

9 MR. CHARLES: Okay. That's it.

10 MR. KNEPPER: All right. Thank you  
11 very much.

12 VIDEOGRAPHER: Off the record 5:21.

13 (Thereupon, the deposition  
14 was adjourned at 5:21 p.m.)  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

1 Whereupon, counsel was requested to give  
2 instruction regarding the witness's review of  
3 the transcript pursuant to the Civil Rules.  
4

5 SIGNATURE:

6 Transcript review was requested pursuant to the  
7 applicable Rules of Civil Procedure.  
8

9 TRANSCRIPT DELIVERY:

10 Counsel was requested to give instruction  
11 regarding delivery date of transcript.  
12 Carl Charles ordered the original transcript  
13 regular delivery with Rough Draft.  
14 Copy--Jeffrey Knepper with Rough Draft  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

REPORTER'S CERTIFICATE

The State of Ohio, )

SS:

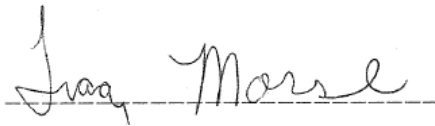
County of Cuyahoga. )

I, Tracy Morse, a Notary Public within and for the State of Ohio, duly commissioned and qualified, do hereby certify that the within named witness, STEPHEN B. LEVINE, M.D., was by me first duly sworn to testify the truth, the whole truth and nothing but the truth in the cause aforesaid; that the testimony then given by the above-referenced witness was by me reduced to stenotypy in the presence of said witness; afterwards transcribed, and that the foregoing is a true and correct transcription of the testimony so given by the above-referenced witness.

I do further certify that this deposition was taken at the time and place in the foregoing caption specified and was completed without adjournment.

1 I do further certify that I am not  
2 a relative, counsel or attorney for either  
3 party, or otherwise interested in the event of  
4 this action.

5 IN WITNESS WHEREOF, I have hereunto  
6 set my hand and affixed my seal of office at  
7 Cleveland, Ohio, on this 24th day of  
8 September, 2021.

9  
10  
11  
12 

13 \_\_\_\_\_  
14 Tracy Morse, Notary Public  
15 within and for the State of Ohio

16  
17 My commission expires 1/26/2023.  
18  
19  
20  
21  
22  
23  
24  
25

1 John Knepper, Esquire

2 john@knepperllc.com

3 September 24, 2021

4 RE: Kadel, Et Al v. Folwell

5 9/10/2021, Stephen B. Levine , MD (#4784022)

6 The above-referenced transcript is available for  
7 review.

8 Within the applicable timeframe, the witness should  
9 read the testimony to verify its accuracy. If there are  
10 any changes, the witness should note those with the  
11 reason, on the attached Errata Sheet.

12 The witness should sign the Acknowledgment of  
13 Deponent and Errata and return to the deposing attorney.  
14 Copies should be sent to all counsel, and to Veritext at  
15 cs-midatlantic@veritext.com

16  
17 Return completed errata within 30 days from  
18 receipt of testimony.

19 If the witness fails to do so within the time  
20 allotted, the transcript may be used as if signed.

21  
22 Yours,

23 Veritext Legal Solutions  
24  
25

Page 252

Kadel, Et Al v. Folwell

Stephen B. Levine , MD (#4784022)

E R R A T A S H E E T

PAGE\_\_\_\_\_ LINE\_\_\_\_\_ CHANGE\_\_\_\_\_

REASON\_\_\_\_\_

PAGE\_\_\_\_\_ LINE\_\_\_\_\_ CHANGE\_\_\_\_\_

REASON\_\_\_\_\_

PAGE\_\_\_\_\_ LINE\_\_\_\_\_ CHANGE\_\_\_\_\_

REASON\_\_\_\_\_

PAGE\_\_\_\_\_ LINE\_\_\_\_\_ CHANGE\_\_\_\_\_

REASON\_\_\_\_\_

PAGE\_\_\_\_\_ LINE\_\_\_\_\_ CHANGE\_\_\_\_\_

REASON\_\_\_\_\_

PAGE\_\_\_\_\_ LINE\_\_\_\_\_ CHANGE\_\_\_\_\_

REASON\_\_\_\_\_

Stephen B. Levine , MD Date



1 Kadel, Et Al v. Folwell

2 Stephen B. Levine , MD (#4784022)

3 ACKNOWLEDGEMENT OF DEPONENT

4 I, Stephen B. Levine , MD, do hereby declare that I  
5 have read the foregoing transcript, I have made any  
6 corrections, additions, or changes I deemed necessary as  
7 noted above to be appended hereto, and that the same is  
8 a true, correct and complete transcript of the testimony  
9 given by me.

10  
11 \_\_\_\_\_  
12 Stephen B. Levine , MD

\_\_\_\_\_ Date

13 \*If notary is required

14 SUBSCRIBED AND SWORN TO BEFORE ME THIS

15 \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.

16  
17  
18 \_\_\_\_\_  
19 NOTARY PUBLIC  
20  
21  
22  
23  
24  
25

[&amp; - 2015]

Page 1

<p><b>&amp;</b></p> <p><b>&amp;</b> 2:10 6:22 61:12 61:18 62:3,10,13 62:16 177:25</p>	<p><b>11</b> 4:22 15:23 16:1 33:20 47:8 51:15 52:12 145:2,10 221:11 238:13</p>	<p>239:1</p> <p><b>15,000</b> 201:18</p> <p><b>150</b> 73:12 182:8,9 182:24 227:14,16 227:17 230:20</p>	<p><b>1973</b> 20:21 22:4 65:3</p> <p><b>1974</b> 35:4,22 37:24</p> <p><b>1977</b> 38:1 39:8</p> <p><b>1978</b> 164:7</p> <p><b>1980</b> 65:13</p> <p><b>1985ish</b> 35:15</p> <p><b>1992</b> 20:21 39:25</p> <p><b>1993</b> 20:21 35:22 37:24 41:4,16 45:22 47:2 65:1</p>
<p><b>1</b></p>	<p><b>1100</b> 1:18</p> <p><b>114</b> 2:21</p> <p><b>116</b> 4:13</p> <p><b>11:26</b> 91:1</p> <p><b>11:31</b> 91:3</p> <p><b>11:45</b> 10:3</p> <p><b>11:47</b> 101:23</p> <p><b>12</b> 5:3 47:13 48:3 53:18,19 96:17 114:15 154:15,24 225:22 245:3</p> <p><b>12,000</b> 201:18</p> <p><b>12.2</b> 192:12,20</p> <p><b>12/21/2020</b> 4:4 56:21</p> <p><b>120</b> 2:4 103:22</p> <p><b>122</b> 4:16 231:9</p> <p><b>12427</b> 250:12</p> <p><b>12:47</b> 101:25</p> <p><b>13</b> 5:6 47:9,10 55:11 107:17 114:15 136:9 156:16,24 205:9</p> <p><b>139</b> 4:18</p> <p><b>14</b> 4:3 5:8 31:12 49:11 65:24 141:9 161:17,25</p> <p><b>140</b> 4:20</p> <p><b>143</b> 227:15</p> <p><b>145</b> 4:22 227:15</p> <p><b>149</b> 182:10,12,15</p> <p><b>15</b> 5:11 47:13 48:3 53:18,19 55:11 65:24 73:19 113:4 167:19 170:5,11 170:14 171:6 182:17 238:14</p>	<p><b>151</b> 227:17</p> <p><b>152</b> 227:15</p> <p><b>154</b> 5:3 227:16</p> <p><b>156</b> 5:6 73:11,13 73:14 76:4</p> <p><b>157</b> 74:5 182:6 190:2,3,6</p> <p><b>158</b> 190:14</p> <p><b>16</b> 3:11 35:25 36:10 47:6 55:11 113:2</p> <p><b>16,000</b> 196:7 198:10 199:13 200:13,25 201:13</p> <p><b>160</b> 205:18</p> <p><b>161</b> 5:8</p> <p><b>17</b> 5:12 47:6 196:9 196:17 203:3,5</p> <p><b>170</b> 5:11</p> <p><b>1720</b> 2:16</p> <p><b>18</b> 5:15 47:6 125:14,15 126:5 128:9,10 133:4,6 134:18 143:1,14 202:16,22</p> <p><b>184</b> 227:15</p> <p><b>19</b> 5:16 117:2 171:2,3,4,9 190:5 213:11,20 215:4</p> <p><b>19.1</b> 148:5 161:10 162:10,12</p> <p><b>190</b> 104:23 106:3,8</p> <p><b>1952</b> 128:23</p> <p><b>196</b> 5:12</p> <p><b>1970s</b> 22:16</p>	<p><b>19th</b> 2:4</p> <p><b>1:19</b> 1:6</p> <p><b>1:56</b> 146:25</p>
<p><b>1</b> 4:3,12 14:19 15:2 18:24,25 19:1,15 79:2 104:13 163:1 165:5 196:22 205:25 206:12,12 215:15,18,19 216:7,8 217:25 219:5 221:12 230:24 245:1</p> <p><b>1-100</b> 107:12</p> <p><b>1-21</b> 3:10</p> <p><b>1-9</b> 171:4</p> <p><b>1-90</b> 104:21,25 106:7,13</p> <p><b>1/1/2019-12/31/...</b> 4:7 78:15</p> <p><b>1/26/2023</b> 250:17</p> <p><b>10</b> 1:15 4:20 6:2 16:23 40:15 54:6 57:19 73:13 76:4 104:22 105:2 106:3,14,15 140:14,22 179:9 180:24 221:12,12 227:1 239:24 245:3</p> <p><b>100</b> 163:12</p> <p><b>10005-3919</b> 2:4</p> <p><b>104</b> 4:12 162:17,20 163:3,13,17</p> <p><b>10:07</b> 40:21</p> <p><b>10:52</b> 69:9</p> <p><b>10:53</b> 69:11</p>	<p><b>1100</b> 107:12</p> <p><b>1-21</b> 3:10</p> <p><b>1-9</b> 171:4</p> <p><b>1-90</b> 104:21,25 106:7,13</p> <p><b>1/1/2019-12/31/...</b> 4:7 78:15</p> <p><b>1/26/2023</b> 250:17</p> <p><b>10</b> 1:15 4:20 6:2 16:23 40:15 54:6 57:19 73:13 76:4 104:22 105:2 106:3,14,15 140:14,22 179:9 180:24 221:12,12 227:1 239:24 245:3</p> <p><b>100</b> 163:12</p> <p><b>10005-3919</b> 2:4</p> <p><b>104</b> 4:12 162:17,20 163:3,13,17</p> <p><b>10:07</b> 40:21</p> <p><b>10:52</b> 69:9</p> <p><b>10:53</b> 69:11</p>	<p><b>16</b> 3:11 35:25 36:10 47:6 55:11 113:2</p> <p><b>16,000</b> 196:7 198:10 199:13 200:13,25 201:13</p> <p><b>160</b> 205:18</p> <p><b>161</b> 5:8</p> <p><b>17</b> 5:12 47:6 196:9 196:17 203:3,5</p> <p><b>170</b> 5:11</p> <p><b>1720</b> 2:16</p> <p><b>18</b> 5:15 47:6 125:14,15 126:5 128:9,10 133:4,6 134:18 143:1,14 202:16,22</p> <p><b>184</b> 227:15</p> <p><b>19</b> 5:16 117:2 171:2,3,4,9 190:5 213:11,20 215:4</p> <p><b>19.1</b> 148:5 161:10 162:10,12</p> <p><b>190</b> 104:23 106:3,8</p> <p><b>1952</b> 128:23</p> <p><b>196</b> 5:12</p> <p><b>1970s</b> 22:16</p>	<p><b>2</b> 3:2 4:4 18:25 20:2 25:23,25 56:20 57:1 73:9 96:18 126:6,7 141:20 155:8 162:21 163:17 165:6 181:19 215:16 221:12 227:12 245:2</p> <p><b>2-0</b> 171:7</p> <p><b>2.3</b> 219:15</p> <p><b>20</b> 5:19 133:2,4 171:7,14 179:16 217:8,17 253:15</p> <p><b>2000</b> 26:16</p> <p><b>2002</b> 102:3</p> <p><b>2009</b> 26:17 211:12</p> <p><b>2010</b> 26:17 164:7 164:12</p> <p><b>2011</b> 24:25 26:17 155:2 158:9</p> <p><b>2012</b> 206:12,20</p> <p><b>2013</b> 206:14,21 209:9</p> <p><b>2015</b> 178:1</p>

[2016 - 78]

Page 2

<b>2016</b> 43:4 158:14 162:3 <b>2017</b> 5:6 43:4 62:4 156:17 157:2 170:14 211:13 213:23 <b>2018</b> 25:10,21 149:23 <b>2019</b> 25:14 79:2,3 79:10 104:20 117:2 149:23 <b>202</b> 5:15 <b>2020</b> 33:2,4 57:3 188:1 <b>2021</b> 1:15 6:3 23:23 123:8 145:14 192:9 196:19 203:17,19 238:1 250:8 251:3 <b>2021-3-7302</b> 144:24 145:14 <b>21</b> 5:22 57:3 103:21 138:3 223:15 224:3 238:17 <b>213</b> 5:16 <b>217</b> 5:19 <b>22</b> 13:13 49:18 138:1,7 144:16,18 182:16 <b>223</b> 5:22 <b>227</b> 3:6 <b>22nd</b> 156:1 <b>23</b> 19:2,6 <b>23rd</b> 156:3 <b>24</b> 251:3 <b>244</b> 3:7 <b>249</b> 3:8 <b>24th</b> 165:23 250:7 <b>25</b> 28:11 33:25 41:24 165:24	171:10 182:20 <b>26</b> 33:25 34:3 123:8 183:13 <b>26,000</b> 199:4 <b>27</b> 146:18 147:4 <b>272</b> 1:6 <b>273</b> 199:17 <b>27603</b> 2:22 <b>27th</b> 191:10 <b>28</b> 16:19,22 <b>29</b> 57:18 <b>2:09</b> 147:2  <b>3</b>  <b>3</b> 4:6 23:10 28:8 28:10,17 33:19 35:4 46:16 62:22 63:4 74:10 <b>3.2</b> 218:19 <b>3.2.</b> 218:16 <b>3.5</b> 148:14,22 149:9,11,19,24 <b>30</b> 58:16 108:21 251:17 <b>30,000</b> 54:14 65:7 65:10 71:11 <b>30308-1210</b> 2:7 <b>31</b> 59:18 79:3 <b>32</b> 195:1 <b>35</b> 194:25 195:3 <b>3871</b> 216:2 <b>3881</b> 219:11,13 <b>3:20</b> 191:16 <b>3:38</b> 191:18 <b>3the</b> 115:5  <b>4</b>  <b>4</b> 3:4 4:7 23:11 35:3 40:24 46:16 74:12 78:14,23 142:22	<b>4-0</b> 172:19 <b>4/28/2021</b> 4:3 14:20 <b>4/8/19</b> 4:12 <b>4/8/2019</b> 104:12 <b>40</b> 172:19,23 176:19 <b>400</b> 205:12 <b>4000</b> 2:11 <b>41</b> 173:20 176:19 <b>42</b> 79:15 <b>444</b> 2:11 <b>47</b> 58:10,11 59:9 59:13 67:18,19 <b>4784022</b> 251:5 252:2 253:2 <b>48</b> 12:25 54:15 <b>49</b> 211:8 <b>4:36</b> 227:6 <b>4:45</b> 227:5 <b>4:50</b> 227:8  <b>5</b>  <b>5</b> 4:10 5:15 23:12 29:25 47:20 87:9 89:10,17 102:6 202:2,10,13,17,24 203:22 205:17,24 215:18,19 227:23 <b>5/15/2017</b> 5:11 170:6 <b>50</b> 233:24 234:22 240:21 245:5,8,10 245:15 <b>52</b> 80:4,10 177:8 <b>54</b> 172:22 <b>56</b> 4:4 173:19 177:9 223:23,23 223:24 <b>58</b> 223:12 <b>590</b> 2:16	<b>5:12</b> 244:4 <b>5:17</b> 244:6 <b>5:21</b> 247:12,14 <b>5th</b> 103:17  <b>6</b>  <b>6</b> 4:12 52:15 92:11 92:13 104:11,17 178:7,25 180:10 183:16 184:8 191:21 238:13 246:4 <b>6,000</b> 199:5 <b>60,000</b> 196:1,6 199:12 <b>60606-0029</b> 2:11 <b>62</b> 4:6 <b>640</b> 2:7 <b>65</b> 157:22,24 <b>66</b> 151:10 161:6 211:12 <b>68</b> 176:18,19,21 177:3,10  <b>7</b>  <b>7</b> 3:6 4:13 103:12 109:24 116:14,24 178:7 183:16 184:8 191:21 229:1 <b>70</b> 108:24 125:2 234:23 <b>70s</b> 56:6 174:13 <b>711</b> 218:13 <b>722</b> 218:16 <b>730</b> 2:6 <b>74</b> 151:11 161:7 <b>75</b> 13:16,19 58:20 59:8 <b>78</b> 4:7 176:21 177:2
--	--	--	--

**[7:15 - advantages]**

Page 3

<b>7:15</b> 243:25 <b>7th</b> 102:18,18 174:21	<b>abnormality</b> 234:19 <b>aborted</b> 98:23 <b>absence</b> 83:19 <b>absent</b> 173:2 <b>absolutely</b> 23:19 34:12,14 73:7 201:24 216:23 232:20 <b>abstract</b> 165:1,7 <b>abuse</b> 17:6,20 88:4 137:6 169:24 233:8 241:1,6 242:24 243:2,3 <b>abused</b> 137:4 235:24,25 <b>abusing</b> 180:8 <b>academic</b> 101:12 233:8 <b>accept</b> 64:8,10 65:15 87:16 88:14 95:16 96:2,11 <b>acceptable</b> 7:22 115:18 153:3 190:22 <b>acceptance</b> 246:9 <b>accepted</b> 64:2,5,15 64:16,19 86:12 <b>accepting</b> 22:12 64:23 65:12 <b>access</b> 66:10 67:13 69:24 70:12 72:3 103:2 121:19 122:3 145:22 152:4,13 190:11 <b>accomplishment</b> 204:23 <b>accomplishments</b> 229:8 <b>accuracy</b> 91:21 251:9	<b>accurate</b> 56:14 84:20 160:16 <b>accurately</b> 18:21 87:23 160:22 163:23,24 206:17 <b>accused</b> 21:22 <b>acknowledgement</b> 253:3 <b>acknowledgment</b> 251:12 <b>acquiring</b> 197:18 <b>acronym</b> 61:19 <b>acting</b> 185:7 191:4 <b>action</b> 250:4 <b>actively</b> 108:18 <b>activities</b> 234:9 <b>activity</b> 108:23 209:21 <b>add</b> 36:3 95:12 104:9 132:15 151:1 <b>addition</b> 28:5 50:13 143:5 206:6 <b>additional</b> 17:14 53:4 120:19 <b>additions</b> 253:6 <b>address</b> 136:2 155:23 200:9 206:8 235:9,11 <b>addressed</b> 133:16 134:9 <b>addressing</b> 136:16 <b>adequate</b> 234:4 <b>adequately</b> 177:21 <b>adhere</b> 109:23 <b>adjourned</b> 247:14 <b>adjournment</b> 249:22 <b>adjusted</b> 155:19 <b>admit</b> 75:17,23	<b>adolescent</b> 53:4,12 53:18 54:4 127:17 133:13,24 134:7 136:24 239:17 <b>adolescents</b> 4:13 5:25 23:3 33:13 33:16,17,20,20,22 33:23 34:10,18 47:14 48:2,9,16,21 49:11 50:3 51:19 54:4 55:2 81:9 83:1,4 103:7 116:16,25 118:9 120:17 124:3 125:1 126:13 136:21 137:5 143:20 144:5 145:23 146:15,16 178:22,22 179:15 179:21 180:25 192:21 195:9,11 222:10 223:20 224:7 234:21 239:3 <b>adult</b> 32:18 47:12 47:12 49:6 51:7 51:11 55:16 193:6 237:14 238:22 <b>adulthood</b> 174:4 <b>adults</b> 4:14 22:11 32:18 33:21,25 34:2 36:15 49:1 50:2 54:18,23 55:1,19 81:10 83:4 116:16,25 117:23 118:10 120:17 174:8,11 <b>advance</b> 189:5 <b>advances</b> 228:19 <b>advantages</b> 188:22 199:8
<b>8</b>			
<b>8</b> 4:16 87:13 104:3 104:7,20 122:23 123:6 246:4 <b>8,000</b> 201:18 <b>80/20</b> 79:1 <b>80s</b> 22:16 56:6 174:14 <b>81</b> 219:12 <b>82</b> 231:8 <b>82001</b> 2:17 <b>85</b> 179:5,15 <b>87</b> 230:23 231:9 <b>88</b> 192:24 <b>89</b> 4:10			
<b>9</b>			
<b>9</b> 4:18 96:22 139:8 139:15 141:8,9 180:23 <b>9/10/2021</b> 251:5 <b>90</b> 50:3 244:22,25 245:1 <b>90837</b> 86:15 <b>93</b> 37:25 42:16 61:25 <b>95</b> 47:5 <b>96</b> 99:6 <b>98</b> 163:8,11,13 <b>9:05</b> 1:15 6:3 <b>9:55</b> 40:19			
<b>a</b>			
<b>a.m.</b> 1:15 6:3 <b>able</b> 65:8,20 66:4 66:19 67:1,12 72:5 94:22 136:13 143:6 152:4			

<b>adversities</b> 136:2 <b>advice</b> 24:10 <b>advisor</b> 228:17 <b>advisors</b> 205:21 <b>advocacy</b> 131:4 230:5 <b>advocate</b> 184:20 187:16 229:6 <b>advocates</b> 110:7 <b>advocating</b> 85:9 <b>affect</b> 209:25 <b>affiliated</b> 22:4 <b>affiliation</b> 44:21 <b>affirmation</b> 138:13 161:11 <b>affirmed</b> 232:18 232:19 <b>affirming</b> 11:3,18 55:9,15,23 90:20 90:21 92:3 143:19 144:4 145:22 152:3,4,12,19 153:22 154:4 156:10 158:13,21 158:24 159:8,14 159:25 160:23 224:19,24 <b>affixed</b> 250:6 <b>affluent</b> 66:13 <b>afford</b> 67:1 69:25 75:1 77:15 <b>afoot</b> 30:25 <b>aforesaid</b> 249:12 <b>afraid</b> 235:14,15 243:14 <b>age</b> 7:1 33:21 49:12 51:15 52:12 143:2,15 155:19 180:10 239:24 245:4	<b>agencies</b> 22:20 <b>agency</b> 73:1 <b>agent</b> 72:4,7,10,19 72:20,25 74:23 77:12 <b>ages</b> 27:14 <b>aging</b> 216:10 <b>ago</b> 13:10 25:11 31:12 35:2 52:14 53:1,17 55:17 65:25 188:2,18,25 188:25 242:18 <b>agree</b> 11:13 100:12 101:17 138:21 215:13 233:17 236:3,6 <b>agreed</b> 85:21 153:3,17 216:13 <b>agreement</b> 108:13 <b>agreements</b> 110:16 <b>ahead</b> 112:23 130:11 140:11 191:14 203:9 219:22 220:1 224:13 244:13 <b>aims</b> 164:8,20,24 <b>akin</b> 45:4 <b>al</b> 1:3,9 6:4,5,10 6:15 14:1 158:9 237:19 251:4 252:1 253:1 <b>alan</b> 2:21 6:16 244:7,11 <b>alcohol</b> 242:21 <b>alcoholism</b> 242:25 <b>alive</b> 99:24 <b>alleviate</b> 133:9 134:23 <b>allotted</b> 251:20	<b>allow</b> 132:19 165:15 <b>allowed</b> 189:15,17 194:6 <b>allows</b> 145:24 <b>almazan</b> 18:7 <b>alongside</b> 217:5 <b>alter</b> 142:25 <b>altering</b> 112:7 <b>alternative</b> 110:1 110:5 113:9 133:8 133:10 134:22,25 135:3 138:9 240:13 <b>ambitions</b> 185:7 <b>amcinnes</b> 2:22 <b>amenable</b> 40:12 <b>america</b> 128:2 129:3 <b>american</b> 26:8 28:1 176:22 177:5 177:17,24 202:23 203:21,24 <b>amount</b> 30:19 <b>amsterdam</b> 237:16 <b>analogues</b> 220:3,7 <b>analogy</b> 158:25 <b>analysis</b> 31:15,19 94:13 <b>anatomy</b> 71:20 81:18 82:1 209:19 <b>anecdotal</b> 110:7 195:7,13 197:4 <b>angle</b> 226:11 <b>annual</b> 44:25 <b>answer</b> 13:1 18:5 22:14 24:5 25:16 31:11,21 33:18 34:23 36:10 43:9 49:21 50:1,3	53:22 56:1,11 57:25 58:10,13,17 58:19,24 59:2,6,8 59:11,17,22 60:4,7 66:20 70:18 71:4 71:6,13,23,25 73:22 74:3,7,11,12 74:23 75:13 76:13 76:21,24,25 77:12 83:14,16 84:12 105:6,9,12,18,21 106:19,22 107:1,4 109:7,8,9 116:6 118:12,24 136:17 144:1 166:25 167:20 169:2 171:17,21,24 172:3,10 175:18 178:15 179:21 180:25 183:3,8 186:9,20 190:15 190:19,24 191:1,9 198:8,12 216:7 229:9 230:19 235:15 236:20 237:4 241:21 242:11 <b>answered</b> 29:1 74:3 76:21 <b>answers</b> 121:20,21 121:23 122:5 <b>anticipated</b> 63:12 <b>antidepressant</b> 159:5 <b>antigay</b> 246:17 <b>antivaxxers</b> 239:5 <b>anxiety</b> 88:3 125:4 185:18 208:18,20 234:3 <b>anymore</b> 174:23
---	--	--	---

[anyway - attempt]

Page 5

<b>anyway</b> 237:18 <b>apa</b> 204:12 205:6 205:23 207:17,18 208:3 <b>apart</b> 137:15 <b>apologies</b> 106:9,12 107:9 138:2 177:7 <b>apologize</b> 61:12 120:1 176:25 203:9 <b>apparent</b> 111:22 111:23 128:5 <b>appear</b> 79:7 90:2 99:7 121:1 138:8 <b>appearances</b> 2:1 3:2 <b>appearing</b> 47:14 <b>appears</b> 79:11 189:20 220:19 <b>appended</b> 253:7 <b>applicable</b> 248:7 251:8 <b>applied</b> 236:1 <b>apply</b> 94:5 <b>appointed</b> 205:25 <b>appraisal</b> 72:13 <b>appreciate</b> 90:7 99:17 138:19,22 154:11 166:14 <b>apprehension</b> 95:21 <b>approach</b> 95:8 102:15 109:21 110:3,10,21 111:18,19 176:23 177:19 <b>approaches</b> 110:2 110:5 <b>appropriate</b> 12:19 74:2 76:19 81:14 142:5 183:17	221:18 224:16 <b>approved</b> 82:9 205:24 <b>approximate</b> 32:12 51:21 52:4 52:6 53:20 <b>approximated</b> 167:11 <b>approximately</b> 24:25 25:10,14 26:12 31:7 37:23 47:20 50:3,8,17 51:7,13 53:11 65:1,11 <b>april</b> 14:13 16:19 16:22 23:23 30:14 104:20 123:8 192:8 <b>areas</b> 72:18 <b>argue</b> 158:12 159:8 <b>argument</b> 187:11 236:24 237:2 <b>arguments</b> 188:8 <b>arises</b> 229:11 <b>article</b> 4:16,17,19 4:22,23 5:5,10,14 5:18,21,25 16:14 17:3,8,9,17 29:4 116:18 117:7,11 117:17,24 118:6 121:6 122:10,14 122:15,25 123:9 123:19 124:16,19 124:22,24 125:8 126:6,7,21,22 127:2 131:24 138:24 139:11 140:3,9,17 144:23 145:5,13,15 154:19 160:25	161:21 196:12 213:16 217:12 223:20 240:25 <b>articles</b> 13:5 16:16 29:3,6,21,22 49:15 49:15 125:25 131:23 159:7 188:10,10 198:25 199:2 205:14 <b>ascertained</b> 143:2 <b>ascertaining</b> 201:14 <b>asexual</b> 194:12 <b>aside</b> 64:17 140:12 144:16 146:17 156:13 161:3 165:25 172:14 184:5 202:1 207:13 224:14 <b>asked</b> 5:15 12:6,16 29:5 30:13 41:17 75:16 95:23 122:17,20 126:25 184:14 202:17,24 203:22 230:16 <b>asking</b> 39:14 50:21 85:4 135:9 135:10,12,15 160:14,18 175:25 197:25 198:2 237:9 245:20,25 <b>asks</b> 242:9 <b>aspects</b> 36:4 77:21 135:21 <b>asperger's</b> 246:7 <b>assent</b> 9:13 <b>assert</b> 174:2,4 <b>asserted</b> 130:7 173:8 <b>assertion</b> 127:3,9 147:22	<b>assessed</b> 155:11 <b>assessing</b> 82:23 214:11 232:11 <b>assessment</b> 5:19 79:25 141:15 211:23 217:9,18 218:8 <b>assessments</b> 141:25 <b>assigned</b> 96:23 97:1,8,11,23 <b>assigning</b> 97:23 <b>assistance</b> 175:17 <b>assistant</b> 35:10 65:4 <b>associated</b> 24:6,12 30:5 82:5 143:8 234:2 <b>associates</b> 62:3 <b>association</b> 13:22 13:23 26:8 28:2 176:23 177:5,18 177:24 202:24 203:22,24 <b>assume</b> 15:10 193:1 217:25 <b>assumptions</b> 218:5 <b>asterisk</b> 36:11 52:6,9 53:18 56:1 68:22 167:9 198:13 <b>atlanta</b> 2:7 <b>attach</b> 17:25 <b>attached</b> 18:16,16 18:19 251:11 <b>attachment</b> 4:4 14:21 <b>attacking</b> 137:9 <b>attempt</b> 18:12 241:6
--	---	---	---



[attempted - behavior]

Page 6

<b>attempted</b> 195:12 <b>attempts</b> 83:25 160:9 <b>attending</b> 6:7 45:21 <b>attends</b> 38:10 <b>attention</b> 88:4 125:4 226:16 229:7 <b>attorney</b> 6:10 12:23 15:17 75:11 250:2 251:13 <b>attorneys</b> 6:6 <b>attractions</b> 239:25 <b>atypical</b> 191:5 234:23 244:23 245:12,13,17 <b>aught</b> 240:6 <b>august</b> 17:22 <b>australia</b> 128:2 <b>author</b> 14:4 18:9 119:21 157:18 237:17 <b>authorization</b> 55:6 55:9,15,22 66:25 67:9 69:5,16 70:6 74:20 77:8 93:17 94:11 96:12 112:17 137:20 226:1 <b>authorize</b> 176:13 <b>authorized</b> 67:13 <b>authorizing</b> 69:19 <b>authors</b> 17:19 123:19 195:25 <b>autism</b> 125:5 234:1,1,17 246:4 <b>autistic</b> 234:16 235:19,20 244:17 <b>autonomy</b> 174:25	<b>available</b> 30:20 207:20 251:6 <b>avenue</b> 1:18 2:16 <b>avoid</b> 27:3 96:6 113:6 185:18 240:8 246:13 <b>avoiding</b> 218:22 <b>aware</b> 13:25 73:16 73:22,25 76:5,13 76:16 81:5,12 90:18 93:25 117:6 117:10,16 118:5 130:1 154:6 166:22,23 207:15 207:22,22 212:25 213:3,7,8 223:5 238:2,18,20 245:11 <b>aya</b> 121:22 <b>ayas</b> 120:19 121:19	193:11,15 203:19 209:9 219:10 221:3 224:17 226:7 227:4 239:9 239:10 <b>background</b> 18:22 96:18 118:24 186:8 208:13 240:3,4 <b>backgrounds</b> 244:23 <b>backside</b> 15:25 <b>bad</b> 83:12,12 190:20 230:13 <b>ballpark</b> 25:3 <b>ban</b> 152:13 178:3 178:11,16,16 183:5 184:21 186:3,4 187:2,2,9 187:18,20 190:10 230:18 <b>banned</b> 142:18 <b>banning</b> 186:21 187:11 <b>bans</b> 152:18 153:22 154:4,5 183:12 187:16 190:8 <b>barn</b> 4:23 145:4 <b>barrier</b> 209:24 <b>barriers</b> 27:5,6 <b>barring</b> 226:21,22 <b>base</b> 67:24 68:17 68:18 <b>based</b> 30:8 31:23 32:7,23 85:14,15 85:16,17,18,19 110:7,15 117:11 117:17 129:4 130:6 132:17,18 140:8 141:24	142:23 176:1,7,9 197:4 199:1,4 206:5 212:9 214:13 <b>baseline</b> 96:19 <b>basic</b> 100:25 101:15 <b>basically</b> 151:13 <b>basing</b> 147:21 <b>basis</b> 45:6 97:1 130:8,8 142:4,14 152:23 184:16 205:21 214:21 <b>bates</b> 4:9 78:17 <b>beard</b> 24:15 <b>becky</b> 122:11 123:7 <b>becoming</b> 81:12 <b>began</b> 20:20 26:17 83:23 <b>beginning</b> 19:1 22:4 73:13 103:9 104:22 107:16 111:20 119:25 121:15 133:4 138:2 141:23 142:21 151:11,25 155:9 165:11 171:6 172:19 177:14 182:15 195:20 196:24 199:24 211:11 239:24 <b>begins</b> 79:20 113:6 147:6 <b>begun</b> 110:24 <b>behalf</b> 2:2,13,19 6:20,22 <b>behaving</b> 232:18 <b>behavior</b> 210:9
--	--	---	---

## [behavioral - called]

Page 7

<b>behavioral</b> 168:24	121:7 135:14	236:12	<b>breadth</b> 205:20
<b>behaviour</b> 155:13	158:16 215:16,18	<b>blood</b> 209:23,24	<b>break</b> 9:23 10:1,3
<b>beings</b> 194:8	215:19 230:8	<b>bmj</b> 14:2,11	10:4 40:11 146:22
230:14	235:6,8	<b>board</b> 205:23	190:1 191:14,20
<b>beliefs</b> 132:19	<b>beware</b> 229:19	<b>bodies</b> 112:3,4	227:2 244:2,25
<b>believe</b> 15:24 16:7	<b>beyond</b> 66:6 98:24	114:18 234:14	<b>breast</b> 58:7 114:17
16:23 24:5 28:7	134:10 195:7	<b>bodily</b> 81:25	<b>breasts</b> 238:16
66:9 71:14,16	<b>bias</b> 113:7 118:15	<b>body</b> 81:18 136:8	<b>bring</b> 27:4 30:25
73:9 74:6 76:22	119:5,8,8,10,20	136:9 137:13	105:22 107:5
93:20 103:5,7	<b>biased</b> 112:8	<b>bolded</b> 90:10	239:4
118:13 119:3,18	<b>bibliography</b>	<b>book</b> 228:25 229:2	<b>brings</b> 185:11
129:20 130:20	17:25 18:2	<b>booklet</b> 4:9 5:6	<b>british</b> 237:24
132:9,23 148:24	<b>big</b> 27:1 199:8	78:11,16 79:2,8	<b>broad</b> 127:25
151:19 157:23	240:7	156:17	194:1
163:25 198:15	<b>billing</b> 86:10,13,15	<b>borelli</b> 2:6 6:19,19	<b>brought</b> 205:11
200:21 208:21	86:18	<b>born</b> 125:3 148:3	<b>building</b> 42:2
222:22 228:16	<b>biochemistry</b>	<b>boss</b> 62:12	<b>bullet</b> 79:20 80:5
231:21 232:3,7,14	209:21	<b>bottles</b> 27:12	80:18 218:24
232:21 233:3,19	<b>biologic</b> 58:6	<b>bottom</b> 19:15	<b>business</b> 42:6,11
246:12,19	59:23 97:16	23:11 25:25 26:2	42:13 44:17 67:19
<b>believed</b> 71:1	101:16,17 193:25	28:9 79:16 92:14	67:20
<b>bell</b> 123:15	195:16 234:18	126:8 128:10	<b>busy</b> 31:4
<b>belong</b> 204:12	<b>biological</b> 96:19	138:3 141:12	<b>butchering</b> 61:13
<b>belongs</b> 74:14 77:1	208:12	142:22 144:18,19	<b>c</b>
<b>bench</b> 104:18	<b>biology</b> 92:17	155:9 157:22	<b>c</b> 6:17 26:1,1,3,22
<b>beneficial</b> 70:8	<b>bipolar</b> 159:3	165:12 171:9	<b>cadence</b> 95:1
71:1 74:19 77:7	<b>birth</b> 97:2 125:2	173:21 176:20	<b>cagey</b> 67:15
158:21 225:19	<b>bisexual</b> 4:10 5:22	177:2 182:17	<b>california</b> 24:16
<b>benefits</b> 4:8 78:16	89:11 178:23	190:6 205:1	<b>call</b> 10:2,4 11:20
79:2,8 84:10	223:17 224:5	<b>bound</b> 118:20	20:15 29:7 31:12
90:11,15 93:13	<b>bit</b> 10:25 23:14	<b>boundary</b> 21:22	44:5 49:16 51:4
143:7	52:7 134:17 239:9	<b>boy</b> 179:2 185:2	61:7 100:15
<b>best</b> 23:22 74:24	<b>blanketly</b> 236:1	<b>boys</b> 47:18 127:18	101:20 130:5
77:13 82:8 85:14	<b>block</b> 145:22	192:12,21 194:5	141:9 175:5,13
115:2 116:6	<b>blockers</b> 146:2	195:9 240:1	194:4 200:15
132:10 147:23	190:11,18 220:17	<b>brain</b> 209:16,19	204:19,21 208:20
177:22 180:18,20	222:8 238:15	209:20,21,22,23	243:18
180:21 182:18	<b>blocking</b> 31:16	209:24,25 210:7	<b>called</b> 7:2 8:10
207:19 216:7	184:7,15 186:5,14	216:10	11:20 20:12,23
<b>better</b> 67:25 68:20	186:21 187:11,23	<b>branstrom</b> 13:12	21:20 22:13 24:2
88:25 109:22	188:12 235:9,25	148:17 160:3	24:15,18 29:13



[called - changes]

Page 8

44:25 60:7 62:3 83:5 174:15 193:9 210:1 237:13 <b>calling</b> 230:6 <b>calls</b> 61:9 <b>calorie</b> 218:23 <b>campos</b> 196:2,19 <b>cancer</b> 204:17 238:6 <b>cantor</b> 191:25,25 192:3,5,17 <b>capable</b> 109:1 136:12 <b>capacity</b> 1:8 46:12 71:22 168:8 202:3 <b>capital</b> 237:19 <b>caption</b> 6:3 57:10 249:21 <b>card</b> 65:20 <b>cardiovascular</b> 238:6 <b>care</b> 4:21 10:25 11:2,5,7,8 29:24 43:11 52:19 60:17 60:20,21 66:4,11 66:11 73:6 80:8 80:24 81:8 90:11 90:20 93:4,6 94:20 102:6,11,17 103:5,11,13,18,22 104:3,7 107:22 108:3,9,12,19 109:5,14,24 110:4 112:19 129:18 130:5,6,6 132:22 132:24 140:16,24 143:19 144:4 158:8,17,21 159:8 174:22 175:8 193:4 211:24 224:24	<b>career</b> 13:8 54:15 54:22,22 55:19 60:15 64:14,16 229:19 <b>careful</b> 69:15 82:22 142:4 185:3 211:22 235:18 <b>carefully</b> 143:23 144:1 186:15 197:15 <b>carey</b> 2:16 <b>carl</b> 2:3 6:13 7:9 149:18 243:22 248:12 <b>carolina</b> 1:1,9 2:19 2:20,22 4:8 6:18 78:15,24 <b>carried</b> 141:18 197:8 <b>carriers</b> 97:17 99:12 <b>carry</b> 92:21 <b>cart</b> 130:24 <b>case</b> 1:6 6:4 8:10 8:11,13,14,20 11:25 12:4 15:3,7 16:7 22:4 24:2,6 24:15,18,22 25:1,6 25:8,14 26:1 35:4 35:11 37:6,10,14 37:17,20 38:3,12 41:6 42:22,23 43:16 44:10,20 45:5 46:3 48:12 57:15 73:16 76:5 78:4 89:18 90:4 90:18 91:7,10,13 98:20 142:4,4,13 142:13,23,23 152:23,23 170:21 170:23 184:16,16	185:3,5 187:17,25 195:13 196:1 197:9 <b>cases</b> 8:2,22 37:2 38:5,6 40:8 45:10 45:25 52:17 114:9 144:22 183:15 184:25 190:16,21 190:23,25 <b>catatonia</b> 208:22 208:23 209:2,4 <b>catatonic</b> 209:5,6 209:8 <b>categorical</b> 73:18 76:7 183:5 190:8 190:10 230:18 <b>categorically</b> 142:18 176:7 178:3 <b>categories</b> 200:2 207:7 <b>category</b> 121:2 184:12 <b>causal</b> 165:16 <b>cause</b> 5:10 159:6 161:20 162:3 249:12 <b>caused</b> 137:8 <b>causes</b> 143:4 208:13 238:5,5 <b>cautious</b> 118:7 152:25 <b>cautiously</b> 120:25 <b>caveat</b> 236:6 <b>ccharles</b> 2:5 <b>cecilia</b> 156:25 157:17 <b>cells</b> 99:5 100:8 <b>center</b> 4:10 20:11 20:12,13,18,18,23 20:25 21:1,8,9,14	21:16,17,19,20,23 22:2,23,24 41:1 42:10 89:12 146:6 <b>certain</b> 101:12 103:16 130:16 216:23 224:12 225:4 239:2,3,25 <b>certainly</b> 13:7 27:9 29:6 36:8 103:23 112:6 148:16 169:5 189:7,18 224:22 <b>certainty</b> 212:14 214:20 <b>certificate</b> 3:8 249:1 <b>certified</b> 7:4 <b>certify</b> 249:8,19 250:1 <b>cetera</b> 22:19 <b>chairman</b> 102:4 103:19 <b>challenges</b> 232:25 235:12 <b>challenging</b> 78:4 <b>chance</b> 13:21 17:18 71:3 186:24 <b>change</b> 29:20 41:8 41:18,20 81:18 83:6 106:6 193:3 207:25 224:25 226:10 252:4,7,10 252:13,16,19 <b>changed</b> 29:15 41:11 92:18 102:24 188:3,6,17 189:8 <b>changes</b> 80:7,23 185:12,13 206:3 251:10 253:6
--	---	---	---

## [changing - clinicians]

Page 9

<b>changing</b> 112:3 114:18 137:13 188:24 189:12,13 222:19 <b>chapter</b> 229:1,2 <b>characteristic</b> 172:24 <b>characteristics</b> 142:25 <b>charge</b> 66:14 <b>charles</b> 2:3 3:6,7 6:13,13 7:7,9 15:16,20 40:10,14 40:18,22 68:25 69:7,12 75:8,19,25 76:2 90:24 91:4 101:19,22 102:1 106:9 146:20,24 147:3 149:21 164:16,21,25 165:3 168:10 191:13,19 203:1,5 203:10,11 210:12 210:17,25 211:3,4 226:18,21,23 227:3,19,22 228:10 232:4 236:14,19 237:9 240:19 241:20 242:6 243:23 244:1,13,14,16 247:9 248:12 <b>charming</b> 52:15 <b>checking</b> 164:1 <b>cheyenne</b> 2:17 <b>chicago</b> 2:11 <b>child</b> 44:1,4,4,11 44:14,15 46:25 47:7,8,9 49:17 52:20 112:10 120:11 121:24,25	122:4 129:6 137:8 144:8 178:25 180:9,11 184:23 185:2,7,9,13 186:7 186:8 191:4 211:17 221:12,12 222:13 233:23 238:22 239:23 240:7,7 246:13,21 246:23,25 247:3 <b>child's</b> 121:23 185:25 <b>childhood</b> 232:19 232:25 <b>children</b> 5:24 23:3 32:18 33:13,19,22 34:10,17 47:10,21 48:2 51:15 52:12 52:16 53:23 54:10 114:15 117:15 118:2 124:2 127:21 133:12,13 133:24 134:7 135:1,6,7,7,8,10 135:11,14 136:22 143:20 144:4,23 146:3,9,12,13 173:7,15 177:20 177:23 178:4,7,19 179:25 180:5,19 180:22 182:19 183:7 185:14,17 186:6,13,22 222:16 223:19 224:7 232:18 233:2,4,24 234:1 235:4,12,17 240:10,11 246:15 247:5 <b>choice</b> 65:15	<b>choices</b> 4:20 140:4 140:16,23 <b>choose</b> 169:20,21 175:15 <b>chromosomes</b> 97:14,17,25 98:9 99:11 100:2,8 <b>circle</b> 216:1 <b>circles</b> 219:6 <b>circulating</b> 209:23 <b>circumstance</b> 95:4 118:14 119:4,19 <b>circumstances</b> 154:6 184:20 <b>cis</b> 168:15,18 178:24 241:16 243:19 <b>citation</b> 116:4 126:15,19,24 127:8 128:6 139:4 <b>citations</b> 116:8 128:5 <b>cite</b> 109:21 144:20 151:18 <b>cited</b> 127:8 162:5 <b>cites</b> 122:8 138:24 144:20 <b>citing</b> 162:10 <b>civil</b> 7:3 85:18 248:3,7 <b>claim</b> 195:25 <b>claiming</b> 173:24 <b>claims</b> 188:14 <b>claire</b> 8:14,18 57:14 73:9 181:12 181:15,16 187:25 <b>clarification</b> 24:14 69:14 <b>clarifications</b> 199:22	<b>clarified</b> 29:20 <b>clarify</b> 45:13 162:9 <b>clarifying</b> 198:19 <b>clarity</b> 29:9 58:22 <b>classes</b> 36:14,21 <b>clear</b> 10:7 152:9 200:2 <b>clearly</b> 84:9 101:2 158:19 <b>cleveland</b> 1:18 250:7 <b>clinic</b> 20:14 21:2,4 35:6 40:24 41:2,3 41:4,12,14,22,23 42:3,4,22,25 43:4 43:6,16,17,22,24 46:17 48:2,4,8,11 49:1,4,5 61:25 63:18 67:18 103:4 127:12 <b>clinical</b> 5:7,18,21 13:2 37:25 39:17 42:18 65:5 68:17 82:21 115:10 127:5,5 130:8 140:6 156:18 157:1 189:4 202:3 202:13 206:6,9 207:20 213:15,22 215:10 217:11,20 217:22 218:9 242:25 244:19 <b>clinically</b> 38:20 128:5 <b>clinician</b> 54:9 102:24 115:9,21 133:24 <b>clinician's</b> 211:22 <b>clinicians</b> 50:6 51:23 64:3,6
---	---	---	---

113:8 115:13 120:17,25 133:15 195:15 197:10 202:6,10 205:19 218:20 <b>clinics</b> 21:5,14 35:24 47:15 64:19 67:18 <b>close</b> 69:15 162:21 <b>closer</b> 95:20 144:18 <b>coached</b> 127:22 <b>coca</b> 222:17 <b>cochran</b> 31:15,18 31:19 <b>code</b> 86:10,15,16 86:19,21,22,24 87:2,3,23 88:2,11 <b>codes</b> 86:13 <b>coding</b> 88:3 89:2 <b>cogent</b> 84:12,15 <b>cognition</b> 210:9 <b>cognitive</b> 234:20 <b>cohane</b> 24:19 <b>cohere</b> 4:21 140:17 141:14 142:19 143:13,18 144:2 <b>cohort</b> 5:5 154:18 155:1,15,17 158:7 197:11 237:16 <b>coin</b> 131:18 <b>cola</b> 222:17 <b>coles</b> 76:8,12,20 77:11 190:13 <b>collated</b> 31:3 <b>colleagues</b> 38:1,4 38:8 39:20 40:3,4 44:18 52:16 127:6 <b>collect</b> 120:16	<b>collection</b> 125:25 <b>college</b> 36:22 49:12 <b>colossal</b> 111:8 <b>column</b> 80:12 155:8 218:17 219:14 <b>come</b> 37:10 40:14 41:8 50:24 61:1,1 61:2 66:2,7 95:13 130:23 135:8 166:23 169:20,21 172:15 174:19 181:3 184:24 191:4 193:10,15 194:1 226:7 235:21 239:10 246:2 <b>comes</b> 49:23 83:1 83:3,20 103:7 109:4 129:19 162:12 197:5 229:17 <b>comfortable</b> 38:23 128:25 <b>comforting</b> 149:3 <b>coming</b> 48:22 49:10 56:10 63:24 64:1 66:8 68:24 105:4 106:17 208:3 <b>comment</b> 159:19 160:15 166:6,12 166:13 184:1 239:14 <b>commercial</b> 42:2 64:1,8,17,23 65:12 86:12 87:15,16,17 <b>commission</b> 250:17	<b>commissioned</b> 249:8 <b>commit</b> 152:11 180:11 <b>commitment</b> 154:7 <b>committed</b> 152:2 179:11 <b>committee</b> 32:1 102:5 108:13,18 132:4 153:15,19 206:1,4,7 212:10 <b>common</b> 133:8 <b>commonly</b> 10:25 87:14 220:15 <b>communities</b> 17:7 17:20 72:10 241:9 241:10 <b>community</b> 37:12 40:6,7 72:16,24 111:5,12,16 116:3 173:23 193:6 238:9 240:16,20 240:22,23,24 241:7,12,13,14,15 241:16 <b>comorbid</b> 235:11 <b>comorbidities</b> 125:4 <b>companies</b> 82:13 <b>company</b> 19:2 88:1,8,16 <b>compare</b> 151:4 <b>compared</b> 147:11 147:18 148:2,13 155:17 <b>compassionate</b> 132:7 154:10 <b>compelling</b> 198:11 <b>competent</b> 130:5,6 132:24,24	<b>compiled</b> 23:20,21 <b>complained</b> 213:5 <b>complete</b> 10:14 23:19 96:3 253:8 <b>completed</b> 249:22 251:17 <b>completely</b> 97:19 143:19 144:3 <b>complex</b> 128:25 133:7 134:20 168:13 <b>complexity</b> 236:8 <b>complicated</b> 235:2 <b>complications</b> 84:18 200:17 <b>complies</b> 25:24 144:17 171:5 205:16 227:13 <b>components</b> 98:11 98:12,25 99:25 209:16 <b>composition</b> 43:24 <b>comprehensive</b> 21:25 192:10 <b>comprised</b> 163:8 <b>compromises</b> 89:8 <b>computer</b> 234:7,9 <b>concept</b> 65:16 73:1 101:4,18 181:7 <b>conception</b> 97:12 97:22 <b>conceptions</b> 98:20 <b>concepts</b> 27:11 189:4 <b>conceptualize</b> 188:15 <b>concern</b> 150:19 240:9 <b>concerned</b> 114:16 114:16,17 118:18
--	--	--	--

[concerned - coping]

Page 11

239:21 <b>concerning</b> 121:23 140:6 <b>concerns</b> 65:6 68:6,8 73:17 76:6 84:22 85:4 119:14 175:1,3 197:22 240:15 <b>conclusion</b> 165:5,8 <b>conclusions</b> 165:13 <b>condition</b> 111:20 208:25 <b>conditions</b> 54:12 161:13 209:16 <b>conference</b> 31:12 42:4 <b>conferences</b> 38:3,3 38:10,13 39:21 40:7 45:21 50:10 205:10 <b>confirm</b> 23:15 80:21 84:19 151:8 201:19 212:16 <b>confirmation</b> 113:7 118:15 119:5,8,8,9,20 <b>confirmed</b> 113:18 113:19,21,25 143:5 148:15 192:12 <b>confirming</b> 11:4 44:16 56:4 153:11 201:25 244:7 <b>confirms</b> 192:11 <b>conflict</b> 120:11 <b>conforming</b> 18:14 60:8 <b>confront</b> 174:17 <b>confronted</b> 17:14	<b>confronting</b> 174:18 <b>confused</b> 106:4 <b>confusing</b> 9:7 <b>conjunction</b> 80:1 97:2,13,15 <b>conley</b> 14:8 <b>connection</b> 80:7 80:23 <b>connote</b> 62:17 <b>consecutive</b> 26:13 26:15 <b>consensus</b> 108:13 120:20 177:22 178:2 182:17 183:5 212:9 230:17 <b>consent</b> 226:2 238:24 239:1 <b>consequence</b> 196:25 197:3 <b>consequences</b> 19:16 93:12,14 111:11 208:13 234:19,20 <b>conservative</b> 102:14 109:21 112:9 <b>consider</b> 137:19 186:21 236:11,16 241:18 243:16 <b>considerable</b> 208:4 <b>consideration</b> 142:5,24 <b>considerations</b> 85:18 201:7 <b>considered</b> 113:20 125:7 126:14 143:1	<b>considering</b> 185:9 193:12 201:11,16 <b>considers</b> 100:25 141:14 <b>consist</b> 194:2 <b>consisted</b> 150:23 <b>consistency</b> 206:9 <b>consistently</b> 191:5 <b>conspicuous</b> 185:4 <b>constantly</b> 17:13 17:13 <b>constitute</b> 32:6 <b>construed</b> 100:24 <b>consult</b> 194:23 215:17 <b>consultation</b> 49:16 141:15 <b>consumption</b> 218:22,25 <b>contagion</b> 113:11 114:8,21 115:5 122:9,12 <b>contains</b> 195:18 <b>contemplate</b> 94:22 <b>content</b> 75:12 <b>context</b> 189:20 <b>continent</b> 127:4 <b>continental</b> 128:1 <b>continue</b> 11:20 102:9 111:2 113:13 173:5 174:4 204:8 206:16,19 230:12 <b>continued</b> 5:1 39:12 42:13 45:23 67:22 83:23 167:22 <b>continues</b> 204:3 <b>continuing</b> 26:7 46:11 63:22	<b>continuous</b> 45:22 <b>continuously</b> 45:15 <b>contraindications</b> 142:8 143:9 144:13 <b>contraintra</b> 144:12 <b>contribute</b> 15:12 121:9 <b>contributing</b> 120:13 <b>control</b> 148:6 150:22 151:9 158:5 <b>controlled</b> 82:22 83:24 110:2,11,14 111:25 195:12 216:17,18 235:19 <b>controls</b> 150:23 155:18 156:9 161:11 <b>controversial</b> 148:20 235:14 <b>controversies</b> 229:4 <b>controversy</b> 228:18,19 229:7,9 <b>conversation</b> 235:7 245:6 <b>convert</b> 240:11 <b>convey</b> 230:21 <b>convince</b> 239:4 <b>convincing</b> 83:19 <b>cope</b> 136:4 <b>copies</b> 251:14 <b>coping</b> 120:12 133:11,17 134:1 134:10,25 135:3 135:13 136:3,7,19 137:11
--	---	---	---

[copy - date]

Page 12

<b>copy</b> 203:1 248:14 <b>corizon</b> 24:3 <b>corner</b> 104:25 141:8 157:23 165:9 199:19 <b>correct</b> 7:18,19 8:9 15:20 18:1,8 19:4,20 22:22 26:6 33:18 35:12 41:6 44:7 46:11 46:14,22,23 62:19 74:22 77:10 80:3 91:7,10,11,14,15 91:18,19,22,23 92:1,5 94:9 96:24 102:7 104:24 105:5,8,11,12,18 106:18,21,24 107:1 119:11 122:12 142:14,19 143:15,21 150:25 151:1 162:18 164:15,19 173:9 173:11 174:4 178:12 184:9,17 199:14 203:18,20 214:1 228:1 239:19 249:17 253:8 <b>corrected</b> 117:7 <b>correction</b> 4:13 116:15,24 <b>corrections</b> 24:8,9 253:6 <b>correctly</b> 60:12 61:14 75:3 77:17 77:23 80:22,25 92:25 105:24 107:7 108:6 113:12 121:12 122:6 138:15	142:8 143:10 154:13 156:2 159:11 165:20 172:12 183:12 191:11,11 219:2 <b>corresponding</b> 126:5 <b>corresponds</b> 245:23 <b>cosigned</b> 56:3 <b>council</b> 4:20 140:15,23 149:14 <b>counsel</b> 7:10 140:4 248:1,10 250:2 251:14 <b>counseled</b> 116:1 <b>counting</b> 156:6 <b>countries</b> 31:13 <b>country</b> 238:11,12 <b>county</b> 249:4 <b>couple</b> 134:19 <b>courageous</b> 136:13 <b>course</b> 7:17 12:24 27:7,19 36:22 55:18 67:3,6 88:10 99:14 132:25 <b>courses</b> 26:8,20 27:23 <b>court</b> 1:1 3:10 6:24 8:8 9:10 107:18,19 108:2 112:5,6 230:21 232:6 <b>courtroom</b> 25:18 170:22 <b>courts</b> 74:15 77:3 <b>cover</b> 66:19 83:5 83:16 84:7 86:7 88:5	<b>coverage</b> 66:4 71:15 73:23 76:14 81:7 90:19 <b>covered</b> 70:11 74:21 77:9 83:17 88:9,23 <b>covering</b> 83:8 <b>create</b> 71:2,3 234:13 <b>created</b> 42:24 43:3 225:9 233:16,18 233:18,21 236:5 <b>creates</b> 99:13 <b>creation</b> 233:19,20 <b>creative</b> 246:24 <b>credential</b> 100:20 <b>credentialed</b> 39:1 <b>credentials</b> 101:12 <b>credible</b> 195:6 197:13 198:6 231:16 232:1,8,15 232:22 233:13 <b>criminal</b> 155:13 <b>criteria</b> 87:12 205:22,24 206:10 210:6 231:20,25 <b>critical</b> 172:23 <b>critically</b> 109:1 <b>criticism</b> 160:3 <b>critique</b> 214:3,5,6 <b>critiqued</b> 213:25 <b>critiques</b> 13:11,11 13:13 <b>cross</b> 127:20 146:3 146:9,12,13 178:18 179:11 180:10 186:18,23 219:6 221:23 236:17 <b>cs</b> 251:15	<b>cultural</b> 230:9 <b>cure</b> 134:4 <b>cured</b> 134:1,9 <b>curing</b> 136:10 <b>current</b> 63:19 72:20,21 81:25 85:15 102:10 103:1,22 135:20 235:1 <b>currently</b> 48:24 113:9 203:23 207:20 <b>custody</b> 3:10 <b>cut</b> 200:2 <b>cute</b> 50:19 <b>cuyahoga</b> 249:4 <b>cv</b> 1:6 18:15,16,19 35:8 <b>cycle</b> 36:10
<b>d</b>			
<b>d</b> 14:6 148:25 237:18,19 <b>dahl</b> 14:5 <b>dahlen</b> 14:1,8 17:8 17:17 <b>dale</b> 1:8 2:13 6:4 6:10 <b>damn</b> 39:1 236:9 <b>dangerous</b> 158:14 243:3 <b>dangers</b> 84:10 94:23 <b>data</b> 82:20,20 110:20 120:16 127:14 150:11,18 150:18 186:18 197:14 198:6 238:18 <b>date</b> 6:2 30:11,18 248:11 252:24 253:12			

[david - desistance]

Page 13

<b>david</b> 227:9	<b>declared</b> 99:8	235:18	145:2 154:15
<b>day</b> 4:12 45:17,17	132:21	<b>demonstrated</b>	156:16 161:17
45:18,20 104:13	<b>declares</b> 114:24,25	127:11 160:8	170:5,6,13,15,21
104:18 250:7	<b>declaring</b> 47:18	161:12 179:25	170:24 181:12,17
253:15	<b>dedicated</b> 28:18	<b>demonstration</b>	196:9 202:16
<b>day's</b> 25:13	<b>dee</b> 2:14	164:3	213:11 217:8
<b>days</b> 20:16 31:12	<b>deemed</b> 253:6	<b>denmark</b> 148:11	223:15 227:19
49:10 241:4,5	<b>deeply</b> 96:5	149:19 151:20	228:3 239:15
251:17	<b>def0001785-000...</b>	163:10	247:13 249:20
<b>de</b> 178:21	4:9 78:18	<b>denote</b> 35:18	<b>depositions</b> 8:12
<b>dead</b> 246:18	<b>defendant</b> 2:19	<b>dense</b> 218:23	<b>depressed</b> 96:5
<b>deal</b> 136:5 170:1	<b>defendants</b> 1:10	<b>deny</b> 73:6 84:23	209:5
<b>death</b> 5:10 98:21	2:13 11:25	<b>denying</b> 85:5,10	<b>depression</b> 61:2
161:21 162:3	<b>defending</b> 6:11	<b>department</b> 2:19	88:3 125:6 159:3
163:17,19 238:4	<b>defensive</b> 221:22	5:7 6:18 8:15,19	169:24 208:18
<b>debalzo</b> 61:11,17	<b>deficient</b> 110:5	22:7 24:7,9 43:8,9	233:7
62:8	<b>deficit</b> 88:4 125:5	43:25 44:2,10,13	<b>deprive</b> 185:21
<b>debate</b> 47:7	<b>define</b> 100:13,17	46:3,7,7,9 57:14	<b>depth</b> 168:17
<b>deblok</b> 237:19	<b>defined</b> 92:16	79:1 156:18 157:1	<b>describe</b> 37:21
<b>decade</b> 205:7	<b>definitive</b> 44:6	<b>departments</b>	100:21 121:1
<b>decades</b> 56:7	50:2 153:16	36:17	136:13
237:14	<b>degree</b> 101:9	<b>dependent</b> 234:7	<b>described</b> 85:20
<b>december</b> 57:3	111:8 214:20	<b>depending</b> 58:5	89:3 93:18,20
79:3 188:1 205:25	<b>degreed</b> 101:13	<b>depiction</b> 160:16	100:14 120:21
206:12,12	<b>degrees</b> 101:8,9	<b>deponent</b> 251:13	<b>description</b> 4:2
<b>decide</b> 152:24	243:3	253:3	5:2 99:16,20
167:12 168:8	<b>delaying</b> 183:17	<b>deposed</b> 7:5,12 8:6	<b>descriptive</b> 118:14
169:14,16 172:8	211:18 220:16	8:11,13 9:5 24:24	119:4,19
215:2	<b>delighted</b> 61:6	25:21	<b>design</b> 153:15
<b>decided</b> 68:11	<b>delivered</b> 52:19	<b>deposing</b> 251:13	155:21 165:15
102:6 171:18	<b>delivering</b> 94:20	<b>deposition</b> 1:13	176:8
<b>decision</b> 74:13	<b>delivery</b> 248:9,11	4:5 5:11 6:11 7:21	<b>designated</b> 97:3
76:25 95:22	248:13	8:2,7 11:19 12:22	<b>designed</b> 158:20
201:11 221:5	<b>delr</b> 61:20 62:10	13:9 14:16,19	186:15
247:2	63:5,25 64:3,6	23:17 25:5,8	<b>desire</b> 185:24
<b>decisions</b> 112:8	66:2,7	56:20,21 57:2,11	<b>desires</b> 232:12
<b>declaration</b> 4:3	<b>demographic</b>	57:13 62:22 73:10	<b>desist</b> 186:24
14:20 15:3,7	121:11	78:14 89:10	192:25
<b>declare</b> 246:25	<b>demography</b> 56:9	104:11 116:14	<b>desistance</b> 181:9
253:4	<b>demonstrate</b>	122:23 139:8	185:13
	18:13 84:1 153:2	140:14 144:14	



[desk - distressed]

Page 14

<b>desk</b> 181:20	246:24	<b>difficult</b> 31:21	<b>discuss</b> 102:3
<b>despite</b> 158:19	<b>devised</b> 82:3	151:2	178:3 202:5,13
<b>detailed</b> 216:9	<b>devoted</b> 229:2	<b>difficulties</b> 206:8	<b>discussed</b> 16:12
<b>determinable</b>	<b>dhejne</b> 148:25	<b>digest</b> 226:6	35:1 45:4,10
98:23	150:3,4,22 151:19	<b>dimensions</b> 136:17	63:22 94:15 162:5
<b>determination</b>	151:25 156:8,25	<b>diminished</b> 55:1	<b>discusses</b> 133:5
70:24 165:15	157:18,19 158:9	<b>dimorphic</b> 98:17	140:3
<b>determine</b> 98:3,10	162:5	<b>direct</b> 122:3	<b>discussing</b> 45:5
98:16 120:21	<b>diagnosed</b> 244:18	<b>direction</b> 112:9	211:12
176:11,12 225:6	246:3	189:10	<b>discussion</b> 12:17
239:16	<b>diagnoses</b> 88:22	<b>directly</b> 52:20	69:10
<b>determined</b> 69:21	91:21 208:10,11	88:16 122:5	<b>disease</b> 181:8
70:4 74:17 77:5	209:3	151:21	238:6
97:12,22 98:8	<b>diagnosis</b> 86:22	<b>director</b> 207:5	<b>diseased</b> 81:22
99:24 171:15	87:9,25 88:22	<b>disadvantages</b>	<b>diseases</b> 233:1
<b>determining</b> 97:24	102:22 120:15,23	143:8	<b>dislike</b> 236:6
<b>detrans</b> 200:8	207:21 208:19	<b>disagree</b> 230:14	<b>dismay</b> 43:17
<b>detransition</b> 5:13	221:22 233:4,25	<b>disagreement</b>	<b>disorder</b> 88:5
179:7,14 193:12	234:12 235:1	82:17 229:11	125:5 159:4 193:9
193:16,23 195:24	236:9,10 245:11	<b>disagreements</b>	<b>disorders</b> 207:19
196:10,17 200:3,4	245:17	82:19	207:21 208:20
201:2,12	<b>diagnostic</b> 86:19	<b>disappoint</b> 225:3	210:7
<b>detransitioned</b>	86:23 87:2,3	<b>disappointing</b>	<b>disparaging</b> 132:6
193:11 201:16	142:5 207:18	225:15	<b>disregarded</b>
<b>detransitioners</b>	<b>dictated</b> 130:20	<b>disappointment</b>	130:10
197:8 200:12	<b>die</b> 164:3 204:16	224:22 225:17	<b>dissatisfied</b> 200:17
<b>develop</b> 30:1 65:4	<b>died</b> 167:13 209:7	<b>disapproval</b>	<b>distinct</b> 199:8,9
120:9 121:8	<b>difference</b> 37:22	246:14 247:6	<b>distinction</b> 39:14
<b>developed</b> 29:25	68:2 100:23	<b>discern</b> 176:15	39:16 69:17
108:12	155:20 185:25	<b>discomfort</b> 136:8	132:16 204:2,9
<b>developing</b> 110:22	<b>different</b> 12:17	<b>discordance</b> 5:24	<b>distinctive</b> 172:23
185:15	27:8 31:25 49:3	33:14 223:19	<b>distinguish</b> 101:2
<b>development</b> 27:2	65:2 72:18 73:2	224:6	168:23 241:1
36:5,6,15 99:2,13	95:22 131:14	<b>discordant</b> 113:10	<b>distinguished</b>
114:17 179:20	132:5 170:3 173:1	133:12 135:1	203:25 204:1,15
206:23 223:4	184:11 185:20	<b>discover</b> 98:6	204:22
<b>developmental</b>	200:6 221:21	<b>discovering</b> 32:10	<b>distorting</b> 129:14
22:1 95:19 103:8	226:11 228:15	97:24	<b>distress</b> 88:3
112:4 178:17	235:4	<b>discovery</b> 185:22	240:20
189:22 221:21	<b>differently</b> 100:13	185:23	<b>distressed</b> 137:12
234:18 235:12	100:17,22 188:3		

[district - dysphoria]

Page 15

<b>district</b> 1:1,1	<b>dogs</b> 38:15	151:7 152:7	206:24 207:7
<b>disturbances</b> 82:6	<b>doing</b> 37:23 61:3	154:23 155:2	<b>due</b> 200:16
<b>diversity</b> 49:5	131:7 179:22,23	156:14,23 157:3	<b>duly</b> 7:4 249:7,10
50:10 63:14	223:1	160:19 161:6,25	<b>dutch</b> 186:25
<b>divide</b> 54:22	<b>domain</b> 210:6	162:4 164:5 165:6	223:6
<b>divided</b> 33:19	<b>domains</b> 210:9	166:16 170:11,18	<b>dwight</b> 128:22
<b>division</b> 44:1,13	<b>domestic</b> 241:9	171:8 172:15	<b>dysphoria</b> 4:15,19
78:25 200:21	<b>door</b> 129:1	174:9 176:21	5:6 11:1,6 12:19
<b>dna</b> 97:2 100:1	<b>double</b> 52:10	181:12 191:20	19:7,23 20:9
<b>doctor</b> 65:19	163:25 238:7,7	194:17 195:19	22:12 23:5,7
68:18 73:1 84:6	<b>doubt</b> 94:21	196:16,20 200:7	27:21 28:3,6,19
84:11,12 88:8	115:20 201:10	200:20 202:22	30:2 32:19 35:23
122:14 152:24	212:6	203:12 204:22	51:12,20 53:6
187:5,22 197:24	<b>downsides</b> 131:2	207:11,13,14,16	54:18 57:24 66:3
222:2	<b>dozen</b> 52:5	207:24,25 208:6	67:10 73:6,21
<b>doctor's</b> 189:3	<b>dpt</b> 2:20	209:15 211:5	76:11 81:9,15,23
<b>doctors</b> 74:15 77:3	<b>dr</b> 6:12 7:9,20	213:24 217:4,17	84:24 85:7 86:11
89:7 129:10,15	10:23 12:9 15:2,4	223:11 224:1,3,8	87:9 91:18,21
175:2	15:22 24:11 25:23	224:11 227:11	93:5 102:22
<b>document</b> 4:6,11	27:10 29:9 33:12	237:21 244:17	114:10 116:18
13:4 15:4 27:25	35:2 40:16,23	<b>draconian</b> 154:9	117:1 120:10,14
57:4,7 62:23	57:1,4 60:12 63:4	<b>draft</b> 205:21	120:22,24 121:10
75:24 78:11 79:4	63:7 69:1,14 73:8	248:13,14	125:1 126:12
79:6 89:12 92:10	73:14 74:8 75:4	<b>drafted</b> 34:8	133:16,25 134:8
103:21 115:17	76:3 77:18 78:4	<b>drafting</b> 102:5	135:11,16 136:10
155:3 161:3	78:22 79:4,14,18	104:6 105:8,11,20	136:21,25 137:1
170:18 190:2	81:5 86:2 89:17	106:21,24 107:3	137:14 138:7
204:25 212:9	89:20 90:2 91:5	<b>dramatic</b> 48:5	139:1,10,17 140:8
217:2,5,21 218:7	92:14 93:3 94:6	<b>dramatically</b> 55:3	140:25 143:4
218:10,13 219:10	96:16 101:20	222:20	145:23 150:25
224:8 228:11	102:2 104:17,20	<b>drawn</b> 165:13	153:5 156:17,25
<b>documentaries</b>	105:16 106:12	<b>dream</b> 226:7	167:4 168:7,14
197:9	107:11,17 108:7	<b>drink</b> 222:16,18	169:12,23 172:6
<b>documented</b> 17:5	112:23 116:23	243:14	172:24 173:5
148:18	117:3 118:21	<b>drinks</b> 222:18	174:8,11 178:5
<b>documenting</b>	123:5,8 126:4	<b>drug</b> 180:8	183:6,18 186:7
231:17 232:9,16	135:10 138:1	<b>drugs</b> 186:11	190:12 193:8
232:23 233:14	139:15,18 140:22	<b>dsm</b> 5:15 87:9	222:9 224:20
<b>documents</b> 16:11	141:2 143:25	202:2,10,13,17,24	229:3 233:5
23:22 116:12	144:16 145:9,15	203:22 205:7,17	234:13 236:13,17
181:13	147:4 148:21	205:24 206:10,13	237:17 241:19,25



[dysphoria - erotic]

Page 16

242:5,8 243:6 244:19 <b>dysphoric</b> 5:16 118:9 121:4 135:6 135:7,14 213:13 213:21 215:8 217:23 220:23 236:2 242:13,13 242:16	<b>educational</b> 18:21 38:7 65:5 237:7 <b>educator</b> 46:4 228:17 <b>educators</b> 130:2 <b>effective</b> 155:24 <b>efficacious</b> 82:17 82:18 111:10 <b>efficacy</b> 71:17 82:12 84:1 111:3 130:12 131:2,5 <b>efforts</b> 134:23 <b>eighth</b> 105:4 106:17 <b>eisenhower</b> 128:22 130:13 <b>either</b> 21:8 23:17 59:14 75:15 97:3 98:17,19 110:21 123:18 124:1 148:5 181:22 201:5 216:2 225:5 230:13 232:18 241:9,10 250:2 <b>ejacula</b> 38:14 <b>ekg</b> 129:12 <b>elaborated</b> 175:22 <b>electrolyte</b> 209:22 <b>elements</b> 131:14 <b>elevated</b> 161:12 <b>eleven</b> 178:18 191:22,23 192:1,1 192:4,5,6 <b>elgudin</b> 61:12,18 62:8 <b>emancipated</b> 33:23,24 <b>embarrassed</b> 189:16 <b>embedded</b> 18:2	<b>embrace</b> 228:18 <b>embryo</b> 98:23 <b>embryos</b> 98:21 <b>emeritus</b> 204:19 <b>emery</b> 2:10 6:22 <b>emotion</b> 210:9 <b>emotions</b> 194:6,8 <b>emphasis</b> 120:3 138:9 208:16 <b>emphasize</b> 26:25 127:16 209:13 214:8 238:23 <b>empirically</b> 177:21 <b>employ</b> 136:20 <b>employees</b> 2:14 78:25 79:9 90:16 90:22 <b>employment</b> 18:22 <b>employs</b> 62:11 <b>enable</b> 71:7 92:19 92:23 195:8 <b>enabled</b> 20:11 <b>enables</b> 38:21 <b>encounter</b> 88:11 <b>encouraging</b> 218:25 <b>endocrine</b> 5:16,17 5:20 53:10,13,21 54:11 55:6 66:23 68:4 81:8 85:10 99:4 103:2 211:13 211:16,21 212:1 213:12,14,20,22 214:1 215:7,10 217:11,19,22 218:9 220:19,22 <b>endocrinologist</b> 68:7 94:18 95:10 214:24 221:4,14	<b>endocrinologists</b> 130:16 188:9 212:12 213:4 216:11,22 221:19 223:8 <b>endorse</b> 110:4 233:10 <b>ends</b> 28:17 126:13 <b>engaged</b> 225:6 <b>engaging</b> 138:13 <b>england</b> 17:4,19 72:14 240:25 <b>english</b> 145:19 <b>enhance</b> 129:21 <b>enormous</b> 81:18 234:3 <b>enormously</b> 30:23 <b>ensue</b> 93:14 <b>entire</b> 46:2 <b>entirely</b> 99:8 176:6 188:13 <b>entitled</b> 4:6,11 62:24 89:12,19 90:5 119:25 138:24 202:24 217:18 <b>entity</b> 62:11 <b>enumerable</b> 99:4 <b>environment</b> 236:5 <b>epidemiology</b> 127:16 <b>episodes</b> 99:10 <b>equal</b> 71:3 225:10 <b>equally</b> 110:5 <b>equipment</b> 129:2 129:12 <b>equipped</b> 221:20 <b>era</b> 46:25 47:1 <b>erotic</b> 168:23
<b>e</b>			
<b>e</b> 6:17 14:6 104:19 104:19 148:25,25 170:12,12 233:10 237:19 252:3,3,3 <b>e62</b> 164:18 <b>e65</b> 165:8,12 <b>e66</b> 165:13 <b>eagerly</b> 38:10 <b>earlier</b> 16:12 23:14 45:4 60:7 63:22 93:18 156:7 199:11 207:24 227:18 <b>earliest</b> 98:21 <b>early</b> 33:20 56:17 240:17 <b>earn</b> 64:22 65:9 <b>ears</b> 240:7 <b>easily</b> 103:2 <b>east</b> 41:24 <b>eating</b> 218:21 222:6 <b>edenton</b> 2:21 <b>edition</b> 102:18,19 103:17 174:21 <b>edmo</b> 24:2 <b>educated</b> 108:25 118:19 130:19 <b>education</b> 26:7 114:22 132:16,17			

<b>errata</b> 251:11,13 251:17	<b>et</b> 1:3,9 6:4,5,10 6:14 14:1 22:18 158:9 237:19 251:4 252:1 253:1	222:16 228:23 230:15	78:22 105:13 110:18 144:20 148:8 159:20
<b>erroneously</b> 83:6	<b>ethical</b> 81:19 94:20 178:17 179:16 192:23 221:8,10,17	<b>evolution</b> 36:9 56:8 189:17,22,23 194:15	<b>exhaustive</b> 23:16
<b>error</b> 113:7 196:3 196:5,6 199:12	<b>ethics</b> 85:13 89:6 179:18	<b>evolve</b> 189:4 <b>evolves</b> 194:17 <b>evolving</b> 17:14 188:24	<b>exhibit</b> 3:10,11 4:3 4:4,6,7,10,12,13 4:16,18,20,22 5:3 5:6,8,11,12,15,16 5:19,22 14:19 15:1,2 18:17 35:9 56:20 57:1 62:22 63:4 73:9 78:14 78:23 89:10,17 95:6 104:11,17 116:14,24 122:23 123:6 139:8,15 140:14,22 145:2 145:10 154:15,24 156:16,24,24 161:17,25 170:5 170:11 181:14,19 196:9,17 202:16 202:22 203:3 207:13 210:13,14 210:20 213:11,20 215:4 217:8,16,17 223:15 224:2,3 227:12 230:24
<b>erythematosis</b> 19:17	<b>europe</b> 128:2	<b>examination</b> 3:5 7:2,6 227:9 244:15	<b>exhibits</b> 3:4,10 4:1 5:1 189:15
<b>escaping</b> 179:18	<b>evaluate</b> 110:17 153:4,19 158:20 221:20	<b>examined</b> 98:22	<b>exist</b> 108:4 177:22 182:18 195:14
<b>especially</b> 39:3 47:9,17 56:17 74:25 77:14 112:3 160:10 186:5	<b>evaluated</b> 43:15 46:17 140:6 206:4 233:25	<b>example</b> 70:20 71:11 72:14 115:16 129:16 135:19 137:3 152:22 208:17,21 214:15 217:1 243:8	<b>existed</b> 62:4
<b>esq</b> 2:3,6,10,16,21	<b>evaluation</b> 52:20 57:25 66:8,17 67:22 69:21 103:6 112:1 153:18 186:6 205:8 206:24 214:19	<b>examples</b> 121:21	<b>exists</b> 229:23
<b>esquire</b> 251:1	<b>evaluations</b> 112:10 138:12	<b>excellent</b> 77:24 216:21	<b>expanded</b> 30:22
<b>essence</b> 84:3,4	<b>evening</b> 12:24	<b>exception</b> 22:20 49:18 52:21 172:9	<b>expect</b> 189:3
<b>essential</b> 134:23	<b>event</b> 250:3	<b>exclude</b> 81:6	<b>expectations</b> 121:25
<b>establish</b> 71:16 93:19 219:24 228:22	<b>events</b> 82:14,15	<b>excluding</b> 15:16 15:18	<b>experience</b> 23:13 23:16 38:8 68:17 82:21 95:7 96:9
<b>established</b> 131:10 131:13 132:9 180:13 192:20 208:9	<b>everybody</b> 147:25	<b>exclusion</b> 73:17 74:1 76:6,18 81:13	
<b>establishes</b> 135:19	<b>everybody's</b> 150:19	<b>exclusions</b> 78:3,7 81:6	
<b>establishing</b> 82:4 82:11 130:25 231:17 232:10,17 232:24 233:14	<b>everyone's</b> 194:16	<b>exclusive</b> 51:22	
<b>establishment</b> 22:23 130:12 131:5	<b>evidence</b> 30:8 31:23 32:6,23 83:8,19 110:8 111:2 114:3,7 127:1,19 195:6,14 197:5 206:3,5,24 213:25 214:4,6,7,9 214:13 220:21 221:1 222:4,8,14	<b>excuse</b> 17:17 64:15 69:2 78:7	
<b>estimate</b> 7:20,22 7:23 31:8 32:5 48:16 55:21 58:14 58:23 59:8 60:16			
<b>estimated</b> 30:11 30:17 245:15			
<b>estimating</b> 59:18			
<b>estimations</b> 31:5			
<b>estrogen</b> 53:24			

[experience - find]

Page 18

127:5,6 137:16 171:16 174:16,23 175:6 189:4 243:1 245:19,19,21,23 245:24 <b>experienced</b> 39:4 206:8 <b>experiences</b> 91:17 121:4 133:25 197:10 200:13 <b>experiencing</b> 46:19 54:18 55:20 <b>experimental</b> 133:7 134:20 236:13,18,24,25 237:2 239:13 241:19 <b>expert</b> 9:4 11:24 12:2 15:3,6 23:13 23:17 24:2 86:2,4 131:25 140:5 187:13,13,16 214:16 230:24,25 <b>expertise</b> 83:15,18 <b>experts</b> 43:19 120:20 206:1 245:23 <b>expires</b> 250:17 <b>explain</b> 36:25 72:8 136:18 208:24 228:9 242:10 <b>explained</b> 84:17 93:9 94:14 <b>explaining</b> 198:21 <b>explains</b> 121:3 125:6 126:14,16 <b>explanation</b> 114:9 <b>explore</b> 133:8 <b>exploring</b> 134:22 <b>exponentially</b> 47:16	<b>expose</b> 193:4 <b>exposito</b> 196:2,19 <b>express</b> 33:13 125:1 136:1 <b>expressed</b> 118:7 155:13 232:12 <b>expressing</b> 223:9 <b>expression</b> 36:5 121:10 <b>expressions</b> 194:11 <b>extend</b> 167:19 <b>extended</b> 111:25 <b>extent</b> 15:15 131:11 153:4,5 167:22 187:21 <b>external</b> 23:2 100:9  <b>f</b>  <b>f64</b> 87:13,24 88:21 <b>f64.0</b> 86:17,23 <b>f64.0.</b> 87:10 <b>face</b> 188:13 235:13 <b>facilitate</b> 174:20 <b>fact</b> 23:19 27:25 44:24 61:6 79:8 82:2 112:2 113:20 113:20 127:18 132:10 152:11 174:12 188:14,24 225:18 234:22 <b>factors</b> 120:13 121:9 <b>factual</b> 130:8 <b>faculty</b> 46:6 <b>failed</b> 234:14 <b>fails</b> 251:19 <b>failure</b> 83:5 <b>fair</b> 54:8 77:22 108:2 162:25 169:9 204:20	210:2 <b>fairly</b> 50:2 <b>fall</b> 121:1 <b>familiar</b> 43:12 78:2 86:17 220:10 <b>family</b> 58:1 112:12 135:8 191:2 194:14 235:21,22 <b>fantasy</b> 72:12 <b>far</b> 10:22 30:24 47:16 167:17 174:25 182:7 185:10 194:22 <b>fascinated</b> 201:6 239:25 <b>fashion</b> 85:17 154:1 181:4 191:5 <b>fate</b> 193:3 <b>father</b> 185:8 191:2 240:5 <b>fault</b> 234:15 <b>fda</b> 82:9 <b>fearful</b> 137:12 <b>fears</b> 137:7 <b>features</b> 87:11 <b>february</b> 155:2 <b>federal</b> 7:3 <b>feed</b> 131:14 <b>feedback</b> 81:4 <b>feel</b> 32:17 38:23 44:21 173:17 221:5 223:10 226:14 228:8 <b>feeling</b> 200:17 <b>feelings</b> 136:14 234:4 <b>fees</b> 66:13 <b>fellow</b> 203:23,25 204:1,14,15,22 <b>fellows</b> 37:5,13 44:5,15	<b>felt</b> 65:18 <b>female</b> 21:18 97:4 97:21 98:19 100:5 125:3 148:3 173:24 175:15 194:3 195:10,11 <b>feminine</b> 168:20 243:9,10,11,13 <b>fetus</b> 98:19,19 <b>field</b> 12:7,8,25 18:9 43:20 60:23 68:19 82:19,19 96:18 100:17 102:25 110:1 120:20 130:3 134:21 152:21 153:9,10 189:8 216:19,20 <b>fields</b> 101:16,16 133:8 <b>fifteen</b> 52:3 54:25 56:12 <b>fifty</b> 83:21,22 111:9 204:16 <b>fighting</b> 230:6 <b>figure</b> 25:3 203:4 203:8 209:3 210:18 230:7 <b>figures</b> 56:2 <b>figuring</b> 208:12 <b>filled</b> 216:2,2 <b>final</b> 164:10 205:24 <b>finally</b> 10:11 25:12 <b>financial</b> 129:19 <b>find</b> 23:25 112:12 115:20 125:13 129:25 131:17 132:5 180:4 181:11 200:14 210:22,23 216:9
--	--	---	--

[find - front]

Page 19

218:4 237:18 <b>findings</b> 31:19 158:2,3,12 <b>fine</b> 14:9 40:13,17 52:4 75:22 148:21 210:16 244:3 <b>finish</b> 9:19,25 105:17 <b>finished</b> 9:21 226:19,20 <b>finland</b> 4:18,21,21 138:8,24 139:9,16 140:5,16,17,24 142:19 143:20 144:2 152:23 <b>finland's</b> 140:4 <b>firm</b> 165:12 <b>first</b> 7:4,11,14 15:1 25:5 31:6 32:20 33:6 40:1 47:10,19 54:23 57:7 79:14 81:20 90:9 110:24 120:5 128:12,19 134:19 158:6 160:9,11 171:2 195:4 196:23 205:3 214:2 217:21 218:12 223:25 249:10 <b>five</b> 13:15 20:3,7 21:5 51:21,25 52:1,13 53:17 56:13,14 58:17,22 59:6 168:5 188:24 237:14 <b>fix</b> 211:2 <b>fixed</b> 209:10 <b>flight</b> 239:7 243:24	<b>floor</b> 2:4 <b>florida</b> 8:13,15,19 8:20 24:18 57:14 62:7 181:17 <b>focus</b> 40:2 <b>focused</b> 27:20 186:6 <b>focusing</b> 55:19 <b>follow</b> 5:3,8 50:24 57:20 60:21 61:6 61:8 73:15 82:24 83:24 96:12 99:5 102:10,14 103:4 103:10 110:15 154:16,24 155:16 159:5 161:8,18 162:1 166:21 180:15 186:15 188:11 233:6 243:22 <b>following</b> 24:10 141:18 152:12 158:8 206:13 228:4 <b>follows</b> 7:5 230:20 <b>followup</b> 51:10 60:17,19,21 82:22 147:25 180:24 181:5 216:21 242:15 <b>folwell</b> 1:8 2:13 6:5,10 251:4 252:1 253:1 <b>foods</b> 218:23 <b>foot</b> 54:15 <b>force</b> 130:23 198:14 205:17 230:18 <b>forces</b> 99:4,4 135:25 136:6 247:1,3	<b>forcing</b> 198:16 <b>foregoing</b> 249:16 249:21 253:5 <b>forever</b> 60:24 <b>forget</b> 98:5 <b>forgetting</b> 123:24 <b>forgive</b> 99:15,19 168:10 <b>forgot</b> 85:25 94:25 170:15,16 <b>form</b> 11:12,23 21:24 34:11,19 45:7 54:20 55:24 60:18 66:5 67:2 67:14 70:1,13 72:6 75:10 76:8 76:12,20 77:11 81:11 84:25 85:8 89:4 93:7 96:14 97:6,21 98:17 100:11 102:16 104:8 110:13,23 114:5 117:20 118:11,16 119:6 119:22 133:18 134:3,12 137:24 139:20,21 140:2 143:22 144:6 149:17 152:5,16 156:12 159:17 168:9 173:10,14 174:6 175:9 176:3 176:14 178:6,13 183:21 184:22 187:4,19 188:5 190:13 193:13 198:7 201:3 207:1 210:11 218:3 220:24 222:11 224:21 225:13 226:3 228:10	232:4 236:14,19 240:19 241:20 242:6 <b>formal</b> 120:14,23 <b>formation</b> 36:9 <b>formed</b> 43:18 <b>forms</b> 22:1 98:17 197:20 <b>formulated</b> 34:21 <b>formulation</b> 39:9 <b>forth</b> 37:6 129:13 199:5 <b>forthcoming</b> 104:3 <b>forward</b> 154:2 171:23 238:10 <b>found</b> 38:6 107:19 159:1 161:8 209:7 237:12 <b>foundation</b> 20:5 22:21 <b>founded</b> 35:4 41:1 <b>four</b> 58:22 150:14 179:13 186:23 193:20,21 194:21 219:6 <b>framing</b> 51:8,14 <b>free</b> 209:12 <b>frequent</b> 18:9 197:18 <b>frequently</b> 5:15 50:22 202:17,24 203:22 <b>freshmen</b> 49:12 <b>friday</b> 6:2 <b>friend</b> 114:23 <b>friends</b> 114:13 115:2,4 185:19 <b>friendships</b> 234:8 <b>front</b> 153:25 170:1 176:10 211:7
--	--	--	--

[frontiers - given]

Page 20

<b>frontiers</b> 192:9 <b>fruit</b> 219:1 <b>fruits</b> 218:25 <b>full</b> 10:14 29:11 32:22 35:14,17 39:16,19 46:9,13 71:3,8 75:11 180:1 188:2 194:10 238:10 <b>function</b> 92:17 97:3 98:15,16 209:25 210:8 <b>functional</b> 71:22 232:25 <b>functions</b> 81:22 <b>further</b> 58:2 199:22 228:23 235:10 249:19 250:1 <b>furthermore</b> 120:23 <b>future</b> 31:20 72:21 72:22,23 73:5 112:15 137:8 153:11 166:12 226:24 229:8	19:23 20:9 21:2,4 22:12 23:5,7 27:20,22,23 28:3,6 28:19 30:2,8 31:23 32:7,19,23 33:13 35:5,23 36:15 40:24 41:2 41:22 42:24 43:11 47:15 49:5 50:9 51:12,20 53:6 54:18,18 55:9,15 55:20,22 56:4 57:24 60:8 61:24 62:2 63:14,17 66:3 67:10 73:6 73:21 76:11 80:2 81:9,15,23,25 83:20 84:24 85:6 86:11 87:9 90:20 90:21 91:17,21 92:3,20 93:5 100:24 101:3,5 102:22 103:1 113:10 114:9 116:18 117:1 118:9 120:9,14,22 120:24 121:4,10 124:25 126:12 127:20,24 133:11 133:16,25 134:8 135:1,11,13,16,24 136:10,21,25 137:1,14 138:7,25 139:10,17 140:7 140:25 141:16 143:19 144:4,22 145:22,23 150:24 152:2,4,12,19 153:5,11,22 154:4 155:19 156:10,17 156:25 158:8,13	158:21,24 159:8 159:14,25 160:23 167:4,4 168:6,7,12 168:13,14 169:12 169:12,23 172:6,7 172:24 173:4,8 174:3,8,10,18 175:16 177:20 178:1,5,18,24 179:11 183:6,18 186:7,18,23 190:11 191:5 193:8,9 194:15,16 196:10,17 213:13 213:13,21,21 215:8,8 217:23 220:23 221:23 222:9 223:18,18 224:5,6,18,20,23 224:25 229:3 231:18,23 232:11 233:5 236:2,12,17 237:16 241:16,18 241:25 242:5,8,22 243:6,20 244:18 <b>genderly</b> 180:10 <b>gene</b> 97:18 <b>general</b> 39:9 66:1 147:19 148:13 149:24 150:23 151:4 159:10 160:24 <b>generally</b> 8:21 27:16 36:16 63:25 64:1 66:8,24 168:6 172:6 229:20 236:9 238:9 <b>generate</b> 113:8 198:10	<b>generated</b> 82:20 <b>generates</b> 114:6 <b>generating</b> 134:21 <b>generation</b> 115:12 <b>genes</b> 97:17 98:14 98:14,16 209:24 <b>genetic</b> 99:12 <b>genetically</b> 195:9 195:10 <b>genital</b> 58:6 60:4 147:9,17 <b>genitalia</b> 71:13 100:4,9 194:9 <b>genitals</b> 71:11 238:17 <b>geographically</b> 44:23 <b>georgia</b> 2:7 <b>gestation</b> 99:3 <b>getting</b> 88:15,16 88:19 103:8 116:1 144:9 <b>girl</b> 179:2,2,13,13 <b>girls</b> 47:17 127:17 195:11 240:1 <b>give</b> 33:9 53:14 58:13 60:16 78:1 87:12,24 88:2,22 93:4 107:14 146:8 146:11,13 177:6 186:23 194:10 217:4 226:2 230:4 234:12 238:25 248:1,10 <b>given</b> 23:19 28:6 81:14 84:16,21 110:18,20 111:14 111:14,15 112:2 153:18 237:3 238:10,14 249:13 249:18 253:9
<b>g</b>			
<b>g</b> 192:8 <b>game</b> 88:6,21 <b>garnered</b> 205:20 <b>gather</b> 166:1 228:23 <b>gay</b> 4:10 5:22 89:11 223:16 224:4 240:5,6,8,11 240:12,16,21,24 241:11 246:10,18 <b>gender</b> 4:15,19 5:6 5:12,16,16,23,24 11:1,3,3,6,18 12:19 18:13 19:7	19:23 20:9 21:2,4 22:12 23:5,7 27:20,22,23 28:3,6 28:19 30:2,8 31:23 32:7,19,23 33:13 35:5,23 36:15 40:24 41:2 41:22 42:24 43:11 47:15 49:5 50:9 51:12,20 53:6 54:18,18 55:9,15 55:20,22 56:4 57:24 60:8 61:24 62:2 63:14,17 66:3 67:10 73:6 73:21 76:11 80:2 81:9,15,23,25 83:20 84:24 85:6 86:11 87:9 90:20 90:21 91:17,21 92:3,20 93:5 100:24 101:3,5 102:22 103:1 113:10 114:9 116:18 117:1 118:9 120:9,14,22 120:24 121:4,10 124:25 126:12 127:20,24 133:11 133:16,25 134:8 135:1,11,13,16,24 136:10,21,25 137:1,14 138:7,25 139:10,17 140:7 140:25 141:16 143:19 144:4,22 145:22,23 150:24 152:2,4,12,19 153:5,11,22 154:4 155:19 156:10,17 156:25 158:8,13	158:21,24 159:8 159:14,25 160:23 167:4,4 168:6,7,12 168:13,14 169:12 169:12,23 172:6,7 172:24 173:4,8 174:3,8,10,18 175:16 177:20 178:1,5,18,24 179:11 183:6,18 186:7,18,23 190:11 191:5 193:8,9 194:15,16 196:10,17 213:13 213:13,21,21 215:8,8 217:23 220:23 221:23 222:9 223:18,18 224:5,6,18,20,23 224:25 229:3 231:18,23 232:11 233:5 236:2,12,17 237:16 241:16,18 241:25 242:5,8,22 243:6,20 244:18 <b>genderly</b> 180:10 <b>gene</b> 97:18 <b>general</b> 39:9 66:1 147:19 148:13 149:24 150:23 151:4 159:10 160:24 <b>generally</b> 8:21 27:16 36:16 63:25 64:1 66:8,24 168:6 172:6 229:20 236:9 238:9 <b>generate</b> 113:8 198:10	<b>generated</b> 82:20 <b>generates</b> 114:6 <b>generating</b> 134:21 <b>generation</b> 115:12 <b>genes</b> 97:17 98:14 98:14,16 209:24 <b>genetic</b> 99:12 <b>genetically</b> 195:9 195:10 <b>genital</b> 58:6 60:4 147:9,17 <b>genitalia</b> 71:13 100:4,9 194:9 <b>genitals</b> 71:11 238:17 <b>geographically</b> 44:23 <b>georgia</b> 2:7 <b>gestation</b> 99:3 <b>getting</b> 88:15,16 88:19 103:8 116:1 144:9 <b>girl</b> 179:2,2,13,13 <b>girls</b> 47:17 127:17 195:11 240:1 <b>give</b> 33:9 53:14 58:13 60:16 78:1 87:12,24 88:2,22 93:4 107:14 146:8 146:11,13 177:6 186:23 194:10 217:4 226:2 230:4 234:12 238:25 248:1,10 <b>given</b> 23:19 28:6 81:14 84:16,21 110:18,20 111:14 111:14,15 112:2 153:18 237:3 238:10,14 249:13 249:18 253:9



[gives - happy]

Page 21

<b>gives</b> 164:3 <b>giving</b> 10:14 25:7 118:23 146:2 170:21 186:18 221:9 235:8 240:12 <b>glad</b> 182:24 <b>gnhr</b> 220:7 <b>gnrh</b> 220:2,9,9 <b>go</b> 7:10,12 34:25 36:24 69:7 75:19 90:24 112:23 140:11 165:7 167:2 169:19 170:24 171:7 172:18 177:8 179:3 191:14 194:24 195:4 203:9 218:15 219:22 220:1 224:13 244:13 <b>goal</b> 210:6 <b>goals</b> 32:14 <b>god</b> 189:21 236:8 <b>goes</b> 106:11 221:2 <b>going</b> 10:20,24 22:8 23:11 24:4 25:22 40:23 45:10 45:13 57:18 61:10 65:19 67:25,25 68:1 71:2 75:5 80:11 83:22 105:4 106:17 110:16 112:13 119:24 120:3 122:13 128:9 134:13 144:15 153:4,10 154:1 177:9 179:6 179:10 180:2,3,11 180:16 181:14 182:7,8,13 185:6	185:16,19,25 186:8,11,12,13 192:25 199:17,21 209:9 211:1 215:1 226:9 230:9,11 239:12 242:15 244:1 <b>gonadotropin</b> 220:14 <b>good</b> 7:8 66:2,24 67:12 69:18,24 83:12 184:25 212:11 221:11 222:14,22 225:1 <b>governs</b> 81:19 <b>grade</b> 215:20 <b>graded</b> 216:6 <b>grading</b> 214:20 215:18 216:4 <b>graduate</b> 38:24 <b>grand</b> 46:2 <b>grant</b> 19:14,20 22:17 <b>grants</b> 19:3,6,9 20:3,8,11 22:8,9 22:19 23:2 129:19 <b>gratuitously</b> 42:19 <b>great</b> 40:18 82:8 87:21 145:12 162:9 169:25 188:22 204:23 210:22,24 227:1 236:7 240:9 <b>greater</b> 138:9 161:10 162:11 174:25 246:9 <b>griffin</b> 17:8,16 127:13 150:11,12 150:12,14 <b>gross</b> 58:14 59:8	<b>ground</b> 7:11 <b>group</b> 38:6 103:19 121:11 132:7 140:5 141:16 150:22 151:9 158:16 162:17 184:9 234:3 242:21 245:5 <b>groups</b> 34:9 117:19 148:6 172:25 197:9 205:18 230:5 <b>grow</b> 180:1 <b>growing</b> 111:5 <b>grown</b> 194:7 <b>growth</b> 99:6 <b>guarantee</b> 226:8 <b>guaranteed</b> 186:16 <b>guess</b> 8:3 39:13 48:6 54:6 99:23 175:25 231:5 <b>guessed</b> 37:9 <b>guessing</b> 65:13 <b>guidance</b> 40:9 206:2 <b>guideline</b> 5:18,21 213:15,22 215:11 215:14,15 217:12 217:20,22 218:9 222:5,5 <b>guidelines</b> 4:18 30:1,5,12,22 31:9 31:14 33:11 34:1 34:7,8,16,20 107:24 108:20,22 109:5 138:6,25 139:9,16 140:6 143:13,18 177:24 211:13,17,22 212:2,13,17,19,24	213:5 214:1 220:20,22 <b>gung</b> 188:19 <b>gurus</b> 114:14 <b>guy</b> 132:14 <b>h</b> <b>h</b> 14:6 148:25 170:12 192:8 252:3 <b>habits</b> 218:21 222:6 <b>half</b> 45:17,19 53:1 65:6,7,8 160:10 175:22 189:11 <b>halfway</b> 16:2 79:19 151:15 172:22 177:14 196:23 <b>hand</b> 80:11,12 92:10 104:25 141:8 155:8 157:23 165:9 190:3 195:13 199:19 218:17 219:14 250:6 <b>handed</b> 145:9 162:6 <b>handing</b> 65:19 <b>handled</b> 82:20 <b>happen</b> 94:5 189:6 <b>happened</b> 129:7 158:23 <b>happening</b> 114:4 153:13 189:9 <b>happens</b> 114:2 169:19 233:7 <b>happily</b> 222:23 <b>happiness</b> 71:2 72:20,21 <b>happy</b> 158:3 246:21,23
---	---	--	---

[hard - huh]

Page 22

<b>hard</b> 8:17 31:10 49:20 50:1 166:25 <b>harkens</b> 192:22 <b>harm</b> 81:20 224:20 225:12 <b>harmed</b> 111:11 231:24 <b>harmful</b> 225:17 <b>harming</b> 235:10 <b>head</b> 9:12 193:19 <b>header</b> 164:24 <b>heading</b> 21:6 90:15 96:18 141:21 204:25 <b>heads</b> 131:16 <b>health</b> 2:14 4:8,21 10:25 12:18 19:14 20:4,13,14,19,24 21:2,10,15,24 22:3 22:24 29:13 37:5 38:21 41:2 42:11 66:11,11,16 72:21 72:22,23 73:5 78:16,24 79:9 86:2,4 89:1 90:11 90:15 91:25 102:19 109:11 111:13 120:15 130:3,19 131:7 140:16,24 155:22 158:17 159:8 205:11 206:1,7,10 207:6 208:2 221:7 222:15,21 223:2 224:15 225:7,8,9 229:1 232:17 237:8 238:18 <b>healthcare</b> 5:14 81:6 108:15 140:4 196:11,18 224:17	<b>healthy</b> 99:9,24 191:1 218:20 222:6 <b>hear</b> 52:17 94:8 114:13,23 115:13 167:15 183:19 193:14 <b>heard</b> 124:9 183:20 188:8 244:9 <b>hearing</b> 8:17 <b>heart</b> 230:3 <b>heavily</b> 115:15 234:7 <b>heavy</b> 132:21 <b>height</b> 132:25 <b>held</b> 69:10 <b>help</b> 16:12 32:17 38:3 70:15 84:9 94:18 112:13 132:8 134:23 136:17 137:10 169:10 226:10 229:9 235:6,7 <b>helped</b> 29:25 231:19 <b>helpful</b> 39:3,7 245:22 <b>helping</b> 136:5,11 <b>helps</b> 199:3 <b>hepatitis</b> 243:15 <b>hereinafter</b> 7:4 <b>hereto</b> 253:7 <b>hereunto</b> 250:5 <b>heroine</b> 167:13 <b>hesitance</b> 82:8 <b>hesitant</b> 82:15 154:1 <b>hesitate</b> 71:24 <b>hesitated</b> 71:25	<b>hesitating</b> 53:22 <b>heterosexual</b> 168:21 194:12 <b>hidden</b> 243:6 <b>hide</b> 228:18 <b>hierarchy</b> 214:12 214:17 <b>high</b> 17:5 21:21 71:12 106:11 121:25 147:8,16 148:11,14 218:2 <b>higher</b> 148:5,15 149:9 241:7 245:9 <b>highest</b> 147:11,17 <b>hired</b> 65:3 <b>histologically</b> 98:22 <b>historically</b> 67:17 225:25 <b>histories</b> 91:25 <b>history</b> 103:8 181:6,7,9,10 221:21 235:1 <b>ho</b> 188:19 <b>hold</b> 207:12 <b>homoerotic</b> 239:24 <b>homophobic</b> 191:6 191:9 239:18,22 <b>homosexual</b> 168:21 178:23 194:13 <b>homosexuality</b> 179:20 246:14 247:7 <b>honest</b> 89:8 <b>honesty</b> 89:8 <b>honored</b> 204:17 <b>hook</b> 221:17 <b>hope</b> 84:12 153:12 205:5	<b>hopefully</b> 222:2 <b>hoping</b> 156:6 <b>hormonal</b> 81:7 92:18 111:3 142:24 143:14 193:4 241:22 <b>hormonally</b> 238:19 <b>hormone</b> 56:4 58:9 81:16 143:8 165:17 173:4 221:3 237:15 <b>hormones</b> 31:16 54:5 58:4 59:1 67:21 68:2,5 73:20 76:10 83:2 84:7 90:21 97:16 112:17 137:22 138:14 146:3,9,12 146:14 174:14,20 180:3 184:7,15 186:5,14,18,22 187:11,24 188:12 211:19 220:8,14 221:13 225:1 226:2 235:9 236:1 236:17 238:15 <b>horrified</b> 213:4 <b>horse</b> 130:25,25 <b>hos</b> 4:23 145:4 <b>hospital</b> 88:12 146:5 <b>hospitalized</b> 243:4 <b>hospitals</b> 88:10 <b>hour</b> 26:7 175:22 <b>hours</b> 116:1,1 <b>housed</b> 41:23 <b>ht</b> 165:16 <b>http</b> 200:9 <b>huh</b> 172:2
--	--	--	--

[hum - indicated]

Page 23

<b>hum</b> 140:10 151:12,17 166:5 177:16 199:23 <b>human</b> 20:12,25 21:8,25 27:1,1 28:14 36:5 65:6 102:23 136:12 194:8,14,14 223:4 223:4 230:14 <b>hundred</b> 24:4 58:22 129:16 <b>hundreds</b> 46:18 <b>hus</b> 141:17 <b>hyperactive</b> 125:5 <b>hypotheses</b> 113:9 120:9 121:9 133:9 134:22 <b>hypothesis</b> 113:14 113:17,21,24 114:1,6 115:12 116:3,9 122:9 198:11	104:14 116:20 123:2 127:20 139:12 140:19 145:6 154:20 156:21 161:22 170:8 195:8,10 196:13 202:19 213:17 217:13 223:21 <b>identifications</b> 168:20 194:3 221:23 <b>identified</b> 146:4 149:24 180:10 186:23 196:1 233:1,4 <b>identify</b> 49:7 98:25 103:23 115:4 191:23 <b>identifying</b> 193:22 <b>identities</b> 12:11 194:16 <b>identity</b> 6:8 27:22 27:24 35:5 36:9 36:15 40:24 41:3 41:22 42:25 44:20 46:19 54:19 55:20 61:24 62:2 63:18 81:25 103:1 118:18 127:24 135:20,21,22,24 137:9 141:17 143:3 166:18 167:4 168:7,13,13 169:13 172:7 173:8,24,25 174:3 178:19 179:11 193:9 194:16 232:11 233:15 236:4 242:22,23 247:5	<b>ideology</b> 131:9 <b>ignores</b> 143:24 <b>iii</b> 158:6 <b>illinois</b> 2:11 <b>illness</b> 208:14 210:7 <b>illogical</b> 152:6,8 <b>imagine</b> 90:10 <b>immediately</b> 72:1 <b>immigrant</b> 155:21 <b>impact</b> 71:19,21 82:4,5 83:9 158:1 158:4,11 206:10 237:5,5,6,6,8 <b>impacts</b> 82:24 <b>impersonators</b> 175:15 <b>impinging</b> 247:3 <b>implicate</b> 210:8 <b>implication</b> 73:2 <b>implications</b> 5:13 188:16 196:11,18 238:21 <b>imply</b> 121:3 160:21 <b>important</b> 66:10 122:1 131:6 159:4 181:8 200:1 228:16 <b>impotent</b> 38:13 <b>impressed</b> 204:10 <b>improved</b> 82:6 153:5,6 <b>improvement</b> 150:2 <b>inadvertently</b> 179:19 <b>inaudible</b> 127:12 245:6 <b>incident</b> 95:3	<b>include</b> 11:7 33:12 34:1 91:16,20 121:22 <b>included</b> 11:9 20:14 23:6 205:8 <b>includes</b> 120:19 124:23 206:24 <b>including</b> 12:14 90:20 100:24 110:3 127:12 135:7 138:10 199:1 <b>incongruence</b> 81:24 144:22 <b>incongruent</b> 5:17 213:13,21 215:9 217:24 <b>inconsistencies</b> 75:15 <b>inconsistent</b> 189:21 <b>incorporate</b> 32:15 103:14 <b>incorrect</b> 75:23 109:4 <b>increase</b> 32:16 48:2,5 185:25 <b>increased</b> 47:16 55:2 114:9 159:1 160:8 222:24 <b>increases</b> 159:15 159:25 <b>increasingly</b> 173:22 <b>independent</b> 41:5 212:12 <b>index</b> 3:1,4 4:1 5:1 <b>indicated</b> 146:8,11 178:10 183:17 220:2 221:2,2,19 222:20,24,25
<b>i</b>			
<b>icd</b> 207:19 <b>idaho</b> 24:3,8 <b>idea</b> 66:16 114:2 123:20,25 124:4 124:14 129:16 180:9 184:25 186:2 190:16,20 190:22 201:9 214:10 221:11 222:22 239:2 <b>ideal</b> 189:23 <b>ideally</b> 176:5 <b>ideas</b> 115:6 <b>ideation</b> 159:15 160:1,9 233:8 <b>identification</b> 14:23 56:23 63:1 78:19 89:14			



[indicated - introducing]

Page 24

226:15 241:3 <b>indicates</b> 242:3 <b>indicating</b> 123:22 132:1 160:17 231:3 <b>indications</b> 142:6 <b>indirectly</b> 20:10 <b>individual</b> 39:7 50:12 59:3 92:23 101:11 154:6,7 176:1 192:7 195:16 <b>individually</b> 51:22 53:18 54:9 59:20 133:14,23,23 <b>individuals</b> 5:9 12:15 36:8 38:11 59:14 92:19 120:13 121:6 153:7 161:18 162:1 163:8,9 178:23,24 240:18 242:12 243:17 244:18 246:10,10 <b>indoctrination</b> 132:17,18,21 <b>indulging</b> 81:4 <b>industrial</b> 128:24 <b>industries</b> 129:5 <b>industry</b> 128:11 129:11 130:21 131:13,16 132:20 <b>infant</b> 99:23 100:1 <b>infarction</b> 230:4 <b>infected</b> 118:15 119:5,20 <b>influence</b> 114:14 130:3 233:18,20 <b>influenced</b> 113:11 115:15 233:23	<b>influences</b> 120:11 209:12 <b>inform</b> 16:13 <b>informal</b> 197:7 <b>information</b> 17:15 31:2 99:12 113:18 121:8,18 122:4 124:6 155:16 159:4 193:22 197:19 199:1 207:20 214:18 229:18 <b>informed</b> 10:1 112:13 132:11 191:3 226:2 238:23 239:1 <b>infrequent</b> 28:11 45:6 <b>infused</b> 222:18 <b>initial</b> 22:3 117:11 210:3,5 <b>initially</b> 167:23 <b>initiated</b> 82:3 142:4,13 143:15 <b>initiation</b> 142:24 <b>inorganic</b> 38:14 <b>inpatient</b> 158:8 <b>input</b> 43:18 205:20 <b>inquires</b> 15:15 <b>insel</b> 207:4,16,24 207:25 208:6 209:15 <b>insel's</b> 207:11,14 <b>instantly</b> 173:17 <b>institute</b> 19:14 207:5 <b>institutes</b> 205:11 208:1 <b>institutet</b> 5:8 156:19 157:2	<b>institutional</b> 228:14 <b>institutions</b> 212:5 <b>instruction</b> 248:2 248:10 <b>insurance</b> 64:2,9 64:12,17,24 65:12 66:4 70:11,20,22 71:15 72:4 73:17 73:24 74:22 76:6 76:15 77:10 78:3 78:11 82:13 83:16 84:7 85:2 86:3,5,6 86:9,12 87:15,16 87:17 88:1,8,16 90:19 <b>insurances</b> 64:19 <b>insuree</b> 65:18 <b>intact</b> 191:2 235:21 <b>integral</b> 22:6 <b>integrate</b> 38:18 94:2,3 <b>integrated</b> 93:10 94:12 <b>integration</b> 94:7 95:7 96:11 155:12 <b>interaction</b> 97:18 <b>interactions</b> 129:4 136:15 <b>interested</b> 32:15 88:19 107:18 108:25 208:12 209:15,18 250:3 <b>interests</b> 194:4 200:23 243:10,11 <b>interfere</b> 10:20 <b>internal</b> 168:23 246:24 <b>internalize</b> 226:6	<b>internally</b> 168:19 <b>international</b> 28:22,23 29:10,12 108:16 109:10 153:15 205:12 245:23 <b>internationally</b> 153:3 <b>internet</b> 114:14,15 114:21 115:16,23 115:24 195:18 196:2 197:7,13,17 197:18 198:6 199:1,4 235:2 237:13 <b>interns</b> 37:4 39:23 <b>internship</b> 38:25 <b>interpersonal</b> 115:1 <b>interpretations</b> 120:8 <b>interpreted</b> 158:22 <b>interrater</b> 208:9 <b>interreliable</b> 208:9 <b>interrupt</b> 65:23 95:3 <b>interrupted</b> 42:9 106:1 <b>intervals</b> 50:23 <b>intervention</b> 173:3 178:9 184:21 <b>interventions</b> 84:23 85:6,14 118:8 138:14 142:25 143:14 <b>interviewed</b> 91:9 <b>introduce</b> 210:14 <b>introducing</b> 217:16
--	---	--	--

<b>introduction</b> 163:5 196:24 <b>intuition</b> 115:10 115:11 <b>investigated</b> 163:6 <b>investigative</b> 144:21 145:13 <b>investigator</b> 19:19 <b>invite</b> 40:6 <b>invited</b> 29:3 104:9 <b>involved</b> 31:8 32:21 44:6 46:4 52:22 98:11 104:2 104:4,6 105:7,20 106:20 107:3 108:14,19,21 115:15 129:18 242:19 <b>involvement</b> 102:3 233:16 <b>involves</b> 36:4 <b>irreversible</b> 143:7 <b>ish</b> 35:16 <b>issuance</b> 88:15 <b>issue</b> 17:23 27:1 81:24 84:11 115:21 148:20 192:23 197:3 233:5,6 <b>issued</b> 102:18 206:13 207:16 <b>issues</b> 4:18 17:22 47:11,13 54:19 55:20 75:14 138:24 139:9,16 167:3 168:7 169:13,18 172:7 174:17 242:20 <b>issuing</b> 109:5 <b>items</b> 122:2,5	<b>iteration</b> 22:3 39:11 <b>iterations</b> 20:20 <b>iv</b> 206:10  <b>j</b>  <b>j</b> 148:25 <b>jama</b> 18:6,11 <b>january</b> 79:2 <b>jeffrey</b> 248:14 <b>job</b> 77:24 229:14 230:10,11 <b>john</b> 2:15,16,17 6:9 226:19 251:1 251:2 <b>joint</b> 207:17 210:4 <b>jones</b> 2:14 24:21 170:12 <b>joseph</b> 2:25 <b>journal</b> 17:4,19 28:22,23 29:3,4,5 29:10,12,21,22 72:14 108:15,16 108:18 109:10 124:17 205:14 212:3,5,11 237:24 240:25 <b>journals</b> 28:12,13 28:18 29:7 72:15 198:24 <b>judgment</b> 211:23 <b>juices</b> 219:1 <b>july</b> 17:23 30:14 <b>jump</b> 176:17 <b>jumping</b> 52:7 <b>june</b> 209:9 <b>junk</b> 88:24 <b>justice</b> 2:20 <b>justifiable</b> 153:20 <b>justification</b> 178:3 <b>justifications</b> 85:5	<b>justify</b> 183:5,8 227:24 230:17 <b>juvenile</b> 172:24  <b>k</b>  <b>k</b> 170:12 237:19 <b>kadel</b> 1:3 6:4,14 251:4 252:1 253:1 <b>karolinska</b> 5:8 156:19 157:2 <b>keep</b> 23:20 32:10 49:2 210:25 243:1 <b>keeping</b> 161:14 201:8 219:9 <b>keira</b> 123:15 <b>keohane</b> 170:12 <b>kept</b> 56:2 62:9 <b>keuroghlian</b> 18:7 <b>key</b> 7:13 166:18 218:5 <b>kid</b> 221:9 236:2 246:18 <b>kids</b> 235:21,23,24 <b>kill</b> 240:6 <b>kind</b> 9:13 23:21 34:24 38:15 42:13 53:2 70:21,22,23 81:7 115:10 131:25 175:1 185:11 191:7 209:8 245:17,24 <b>kinds</b> 53:8 82:14 85:19 115:6 150:18 197:19 <b>kink</b> 168:21 <b>knepper</b> 2:15,16 3:6 6:9,9 10:1 11:12,23 12:24 14:15,17 15:14,18 15:19 34:11,19 40:13 45:7 54:20 55:24 60:18 66:5	67:2,14 70:1,9,13 72:6 75:5,9,21 81:11 84:25 85:8 89:4 93:7 96:14 97:6 100:11 101:21 102:16 104:8 106:6,10 110:13,23 113:23 114:5 117:20 118:11,16 119:6 119:22 125:14,16 133:18 134:3,12 137:24 143:22 144:6 146:23 149:17 152:5,16 156:12 159:17 164:14,18,23 165:2 168:9 173:10,14 174:6 175:9 176:3,14 178:6,13 181:18 183:21 184:22 187:4,19 188:5 193:13 198:7 201:3 203:2,7 207:1 210:11,16 210:19 211:2 218:3 220:24 222:11 224:21 225:13 226:3,20 226:22,25 227:4 227:10 243:21,25 244:3,7,11 247:10 248:14 251:1 <b>knepperllc.com</b> 2:17 251:2 <b>knew</b> 117:21 216:7 <b>know</b> 7:11 10:8 11:4,19 17:13 18:8 22:18 26:18

[know - levine]

Page 26

27:10,13,24 30:16 31:10 32:8 33:5 36:18 37:6,23 38:14 39:1,2 42:3 42:21 43:5,21 46:7 49:7,8 50:25 55:12 56:12 57:20 58:13 67:24 68:19 70:21 71:18,18,21 71:23 72:8,22 75:9,11,12 79:21 81:14 82:17 83:14 85:9 86:11 88:3 88:23 92:7 96:10 98:20,23 99:6 100:6,15 101:1 106:4 108:24 109:6 117:22 118:23 122:15 123:14,18 124:8 124:10,16,21,21 124:22 127:1,7,24 129:23,24,25 130:14 132:3 134:13 138:18 143:25 148:17,22 149:12 152:20 157:7,7 158:23 160:2 163:22,23 168:15 169:1,15 169:19 171:25 175:13 177:10 179:3,4 180:2,20 180:21 181:8,10 182:2 187:22 189:5,18 190:7 192:24,24 193:1,2 193:6 194:13,22 199:4,10 200:19 200:22 201:14 204:14,18,19	206:16 208:22 211:8 212:22 214:24 216:6,15 216:17,25 219:20 221:16 223:3 225:2,8 230:2,16 234:17,17,20 235:6 236:7,24 238:2 239:2 240:6 245:20 247:1 <b>knowing</b> 136:12 179:8 <b>knowledge</b> 44:7 67:24 68:16,18 85:15 124:5,17 166:17,19,20 195:5 202:9 <b>knowledgeable</b> 43:23 93:22 101:7 <b>known</b> 72:11,13 162:16,22 163:19 231:20,25,25 240:23 <b>konsinkongruens</b> 4:23 145:4	<b>language</b> 103:14 <b>large</b> 42:14 46:12 173:2 <b>largely</b> 49:11 175:24 <b>larger</b> 200:22 230:19 <b>late</b> 204:21 <b>latest</b> 192:7 <b>law</b> 2:15 <b>lawful</b> 7:1 <b>lawyer</b> 189:24 242:19 <b>layperson</b> 101:2 <b>lcb</b> 1:6 <b>lead</b> 14:4 98:21 153:9 157:18 181:4 185:13 200:3 <b>leading</b> 80:6,23 112:1 <b>leads</b> 95:21 115:10 <b>lean</b> 201:15 <b>learn</b> 37:11 <b>learned</b> 88:20 173:16 <b>learning</b> 95:1 188:23 <b>leave</b> 172:16 <b>leaves</b> 225:7 <b>leaving</b> 128:23 <b>lecture</b> 44:25 45:1 45:1 <b>lectures</b> 36:17 <b>led</b> 153:9 205:2 <b>left</b> 41:9 75:6 80:11,12 123:11 155:8 176:19 182:6 <b>legal</b> 1:17 2:3 6:14 6:20 77:20 138:18	189:2 251:23 <b>legally</b> 33:24 <b>lesbian</b> 4:10 5:22 89:11 223:16 224:4 240:22 241:11 <b>letter</b> 55:15,22 67:9 68:4,12 69:22 70:6 80:14 93:17,18 94:10 95:9,23 96:1,12 112:21 137:19 221:3,6,15,16 226:13,17 <b>letters</b> 55:5,8 56:3 56:17 74:20 77:8 80:11 95:14 112:16 226:1 <b>level</b> 21:21 38:5 100:20 109:3 214:16 220:20 <b>levine</b> 1:13 3:5 4:3 4:5 5:12 6:6,12 7:1,6,9,20 10:23 12:9 14:21 15:4 15:22 24:11 25:23 27:10 29:9 33:12 35:2 40:16,23 45:1,1 56:22 57:1 57:2,4,12 60:12 61:12,18 62:3,10 62:13,16 63:4,7 69:1,14 73:8,14 74:8 75:4 76:3 77:18 78:4,22 79:4,14,18 81:5 84:11 86:2 89:17 89:20 90:2 91:5 92:14 93:3 94:6 96:16 101:20 102:2 104:17,20
	<b>I</b>		
	<b>I</b> 14:6 28:9 237:19 <b>label</b> 234:12 <b>labeled</b> 219:15 <b>labia</b> 60:10 <b>lack</b> 84:18 178:2 183:4 188:11 213:5 230:17 <b>lake</b> 2:11 <b>lambda</b> 2:3 6:14 6:20 <b>lambdalegal.org</b> 2:5,8 <b>lancet</b> 237:22,24 <b>landscape</b> 194:15		

[levine - loving]

Page 27

105:16 106:12 107:11,17 108:7 112:23 116:23 117:3 118:21 123:5,8 126:4 135:10 138:1 139:15,18 140:22 141:2 143:25 144:16 145:9,15 147:4 148:21 151:7 152:7 154:23 155:2 156:14,23 157:3 158:14 160:19 161:6,25 162:4 164:5 165:6 166:16 170:7,11 170:13,18 171:8 172:15 174:9 176:21 181:12 191:20 194:17 195:19 196:16,20 200:7,20 202:22 203:12 204:22 207:13 211:5 213:24 217:4,17 223:11 224:1,3,8 224:11 227:11 237:21 244:15,17 249:10 251:5 252:2,24 253:2,4 253:12 <b>levine's</b> 15:2 <b>lgbtq</b> 43:11 <b>liaison</b> 43:25 <b>lies</b> 87:21 <b>life</b> 27:1 36:10 71:4,8,22 97:21 99:14 112:7 115:24 129:21 153:6 169:18	171:15 174:15,16 174:23,23 175:5 180:11 188:23 189:10 222:20 235:6,8 238:10,11 <b>lifelong</b> 143:8 193:4 <b>lifetime</b> 71:2 <b>light</b> 155:22 <b>likes</b> 179:2 <b>limitation</b> 156:8 <b>limitations</b> 199:7 199:9 229:12 <b>limited</b> 166:20 190:23 197:4 242:25 <b>line</b> 57:19 73:13 73:19 74:10,12 76:4 104:22 105:2 106:3,14,15 107:17 171:6,9,10 173:17 182:16,20 190:5 216:1 227:23 252:4,7,10 252:13,16,19 <b>lines</b> 99:5 <b>link</b> 115:2 183:22 <b>lisa</b> 116:10 117:2,6 119:7 122:11 123:7 <b>list</b> 8:5 12:5 23:16 23:20 72:17 192:6 <b>listed</b> 22:10 27:24 28:7 35:8 215:14 215:14,21 <b>listening</b> 231:5 240:4 <b>listing</b> 193:19 <b>lists</b> 20:3 23:12 191:25	<b>literature</b> 38:19 109:2 116:11 188:8 205:20 <b>little</b> 9:7 23:14 39:4 52:7,15 133:7 134:17,20 141:5 162:19 168:25 169:1 188:20 239:9 <b>littman</b> 117:2,7,17 118:6 <b>littman's</b> 116:10 119:7 <b>live</b> 71:22 149:2 175:12,15 222:22 <b>lived</b> 136:3 180:14 <b>lives</b> 92:21 115:8 129:22 135:25 154:7 175:16 179:12 180:1,4,6 199:3 <b>living</b> 64:22 109:14 154:8 167:18,20,23,25 168:3 174:15 179:12 193:24 <b>llc</b> 2:15 <b>lo</b> 169:1 <b>located</b> 44:23 <b>location</b> 20:22 41:5 <b>long</b> 5:3,8 66:20 72:9 82:5 86:11 89:23 127:23 132:14 138:11 153:16 154:16,24 155:15 158:7 161:18 162:1,23 166:21 168:11 204:12,17 222:14 230:22 231:15	232:1,8,15,22 233:12 237:7 238:21 239:8 <b>longer</b> 41:10 62:12 102:7,19 157:15 <b>look</b> 15:8 16:1 21:25 32:11 63:13 79:19 80:14 89:24 100:4 111:2,21 132:22 134:18 163:1 168:5 187:5 197:15 198:24 215:3 217:5 218:6 218:12 219:13 238:10 242:22 <b>looked</b> 111:6 188:1 <b>looking</b> 28:9 32:13 46:15 105:2 111:17 113:3 141:7,20 142:10 157:19 164:19 173:19 174:9 176:20 177:9 183:15 212:13 217:21 218:16 219:15 223:25 <b>lose</b> 210:21 <b>loses</b> 158:5 <b>loss</b> 52:2 <b>lost</b> 159:18 <b>lot</b> 39:2 168:15 188:7,17 189:6 197:22 212:9 222:15,17 <b>lots</b> 50:24 <b>loud</b> 152:22 <b>love</b> 26:9 27:1,17 221:16 <b>loving</b> 27:5,7
---	---	---	---

[low - medical]

Page 28

<b>low</b> 58:20 64:21 214:9,14,22 216:14,16 220:25 220:25 241:8 <b>lower</b> 16:7 26:1 165:8 <b>lowest</b> 214:15,16 <b>lpa</b> 1:6 <b>lunch</b> 10:3 <b>lupus</b> 19:16	194:3 195:8,9 <b>males</b> 59:23,24 <b>malone</b> 125:6 126:13,16 <b>man</b> 243:8 <b>management</b> 8:15 8:19 57:15 <b>manifested</b> 27:5 <b>manifestly</b> 75:23 <b>manual</b> 205:2 207:18 <b>march</b> 117:2 145:14 162:3 <b>marginalized</b> 72:16 111:17 <b>marital</b> 20:13,14 20:19,24 21:1,10 21:15,17,23 22:2 22:23 41:1 42:10 <b>mark</b> 14:25 <b>marked</b> 4:2 5:2 14:22 56:22 57:1 57:18 62:25 63:4 78:18,23 89:13,17 104:13,17 116:19 116:23 123:1,5 139:11,15 140:18 140:22 145:5,9 154:19,23 156:20 156:24 161:21,25 170:7,11 196:12 196:16 202:18,22 203:3 213:16 217:12,17 218:16 219:6 223:20 224:3 <b>marking</b> 15:1 78:22 213:19 217:16 <b>married</b> 62:6	<b>masculine</b> 168:20 243:13 <b>massachusetts</b> 8:11 <b>mastectomies</b> 59:23 <b>mastectomy</b> 60:1 <b>master</b> 130:17 <b>masters</b> 66:14 <b>masturbation</b> 185:23 <b>matched</b> 155:18 <b>material</b> 63:7 89:21 117:3 139:17 141:2 157:3 203:13 215:5 <b>matter</b> 66:1 87:8 174:12 <b>max</b> 6:14 <b>maximize</b> 88:11 <b>maximum</b> 108:21 <b>maxwell</b> 1:3 6:4 <b>mccall</b> 122:11 123:7 <b>mcdermott</b> 2:10 6:22 <b>mcinnes</b> 2:21 6:16 6:17 <b>md</b> 6:6 37:9 101:8 101:9 130:18 251:5 252:2,24 253:2,4,12 <b>mean</b> 44:10,16,17 47:1,3 50:19 58:10 61:20 65:23 75:16 99:3,22 100:3 101:9,10 115:13 119:7 127:14 128:15 132:6,7 139:22,24	167:24 175:12 178:7 190:21 193:23 220:12 226:21 238:3 245:3 <b>meaning</b> 34:14 37:10 42:20 103:18 <b>meaningful</b> 81:2 <b>means</b> 33:24 44:12 47:7 70:12 82:23 101:11 130:6 152:12 201:12 203:7 206:12 218:1 219:19,20 219:21,24 <b>meant</b> 175:23 <b>measures</b> 111:13 240:20 <b>mechanism</b> 209:4 <b>mechanisms</b> 120:12 208:23 <b>media</b> 159:10 197:8 233:16 236:5 <b>medicaid</b> 64:12 <b>medical</b> 11:5,7 12:13 27:2 28:12 31:1 34:17 35:11 39:22 40:5 42:24 72:15 73:6 84:23 85:5,12 87:22 89:6 93:4,6 101:4 102:20 108:20 109:6 118:8 129:12 131:8 138:13 140:7,24 142:6 161:13 173:13,16 175:17 178:9 189:3 200:16 228:14,16
<b>m</b>			
<b>m</b> 2:10 6:17 <b>m.d.</b> 1:13 3:5 4:4,5 5:12 7:1,6 14:21 56:22 170:7,14 244:15 249:10 <b>m.d.'s</b> 100:21 <b>machines</b> 129:12 <b>madigan</b> 227:9 <b>maintain</b> 62:8 <b>maintained</b> 43:18 <b>major</b> 72:15 233:20 <b>majority</b> 33:21 124:25 126:11 166:16 169:13,15 172:7,10 173:2 178:20 190:16,21 <b>majors</b> 85:21 <b>maker</b> 187:6 <b>makers</b> 129:11 <b>making</b> 56:18 188:14 198:14,16 208:4,6 235:16 241:5 <b>maladaptive</b> 120:12 <b>male</b> 21:17 97:3 97:21 98:19 100:5 148:3 167:20 173:25 174:3			

[medical - moved]

Page 29

237:5 <b>medicare</b> 64:10,17 65:15,17,18,19 <b>medication</b> 10:17 10:19 66:18 183:17 220:16 230:4 <b>medications</b> 19:3 211:18 <b>medicine</b> 17:5 30:9 31:23 32:7 32:24 72:14 129:9 130:24 134:21 189:7 214:13,13 228:19 229:20,21 240:25 <b>medscape</b> 124:8 <b>medscape.ca</b> 124:6 <b>medscape.com</b> 122:10 <b>meet</b> 52:18 87:12 <b>meetings</b> 26:9 <b>meets</b> 36:22 <b>member</b> 102:6 105:23 107:6 <b>members</b> 32:6,11 32:13 50:9 72:9 108:23 200:14 201:1 <b>membership</b> 32:13 204:18 <b>memory</b> 8:1,4 23:21 126:2 193:18 <b>men</b> 38:13 195:9 <b>menses</b> 114:16 <b>mental</b> 12:18 20:4 37:5 38:21 66:11 66:11,16 81:24 82:6 88:6 89:1	91:25 102:19 120:15 121:23 130:3,18 131:7 206:1 207:6,18,21 208:2,14 210:7 221:6 222:20 223:2 224:15,17 225:7,8,9 229:1 232:17 <b>mentally</b> 168:19 208:17 <b>mention</b> 21:3 234:22 <b>mentioned</b> 8:20 17:7,16 19:12 24:22 32:3 34:10 42:16 46:16 59:25 93:3 103:12 144:14 150:5 151:9,18 163:16 191:22 192:17 199:11 209:14 <b>mentions</b> 19:13 35:3,9 <b>met</b> 12:23 49:19 49:20 91:6 114:20 118:17 <b>method</b> 197:18 198:4 <b>methodological</b> 113:7 <b>methodology</b> 109:1 <b>methods</b> 82:11 131:1 138:10 140:25 153:3 <b>methologic</b> 83:25 <b>michael</b> 2:10 6:21 <b>mid</b> 33:2 178:21 <b>midatlantic</b> 251:15	<b>middle</b> 1:1 63:13 113:3 141:13 161:6 <b>milieu</b> 209:22 <b>military</b> 128:24 129:1,2 <b>million</b> 99:10,10 <b>mind</b> 67:23 85:5 88:9 95:13 129:7 146:21 161:14 170:2 185:22 219:9 226:10 <b>minimal</b> 60:22 <b>minimum</b> 45:18 245:8 <b>minority</b> 17:7,20 241:8 <b>minors</b> 141:1,17 190:9 <b>minus</b> 42:14 <b>minute</b> 33:9 40:11 207:12 227:1 239:5 244:2 <b>minutes</b> 41:24 191:15 <b>miracle</b> 99:2,13 <b>miraculous</b> 97:19 <b>mis</b> 210:13 <b>misinformation</b> 188:12 <b>mismatched</b> 89:2 <b>misquoted</b> 160:21 <b>missed</b> 110:9 <b>misunderstand</b> 122:18 206:11 <b>mixup</b> 107:9 <b>modifications</b> 80:7 80:24 <b>modify</b> 172:3 <b>modifying</b> 208:4	<b>moment</b> 30:4 34:5 51:1 69:2 79:12 89:24 155:6 177:6 217:4 <b>moments</b> 35:2 53:16 <b>monday</b> 57:3 <b>money</b> 70:25 <b>monographs</b> 205:13 <b>month</b> 17:4 50:23 148:4 238:2 <b>months</b> 13:15 50:25 55:17 99:3 114:25 167:8,19 188:4,6,7,17,18 225:22 <b>mood</b> 159:5 <b>morbidity</b> 5:10 155:12,20 159:1 161:20 162:2 163:7 165:19 237:10 240:16 <b>morning</b> 7:8 13:16 <b>morse</b> 1:20 249:6 250:14 <b>mortality</b> 155:11 158:7 159:2,6 161:12 163:6 165:19 222:24 237:10,14 238:4 240:17,21 <b>mother</b> 185:8 191:1 209:7 240:5 <b>mother's</b> 185:1 <b>move</b> 7:14 8:23 9:9 208:25 239:11 <b>moved</b> 41:4 42:22 45:15,16 61:24 62:2,7
---	---	---	--



[movement - nurses]

Page 30

<b>movement</b> 30:25 <b>moving</b> 28:8 99:15 99:19 138:8 <b>multi</b> 128:1 <b>multinational</b> 30:24 <b>multiple</b> 31:13 172:25 <b>mutual</b> 129:4 <b>mwe.com</b> 2:12 <b>mweaver</b> 2:12 <b>myocardial</b> 230:3	<b>nature</b> 10:18 143:4 168:12 194:9 215:15 221:22 <b>nc</b> 2:14 <b>ncdoj.gov</b> 2:22 <b>nearly</b> 205:7 <b>neatest</b> 181:20 <b>necessarily</b> 11:13 175:13 <b>necessary</b> 30:21 102:20,21 253:6 <b>need</b> 9:23 15:8 46:20 50:25 67:17 68:23 83:21 85:12 89:25 93:5,8 108:22,22,24 125:7,11,13 126:14 128:4 132:12 152:24 157:6 160:15 170:1,2 171:8 176:10 177:7 180:4 188:21 208:23 214:7 222:13,15,25 228:8 233:23 235:3 <b>needed</b> 64:22 120:21 129:3 158:17 208:2,21 <b>needs</b> 9:10 31:3 39:5 198:13 222:20 <b>negative</b> 93:12,13 118:7 <b>neither</b> 95:16 <b>neo</b> 174:18 <b>neovagina</b> 60:9 <b>neuro</b> 209:17 234:23 244:23	245:11 <b>neurobiological</b> 234:18 <b>neurobiology</b> 209:1 <b>neuroscience</b> 5:7 156:19 157:1 210:1 <b>never</b> 49:19 57:5 61:8 67:20 68:15 82:10 114:20 115:23 118:17 160:25 170:2 184:23 195:12 218:11 <b>new</b> 2:4,4 9:20 17:4,19 27:12 32:10,13 41:5 48:21 62:11 72:14 97:21 113:10 155:21 174:17,18 188:10 205:2 233:15 236:4 240:24 <b>newborn</b> 100:5 <b>newborns</b> 99:7 <b>newer</b> 148:12 <b>news</b> 123:16,17 <b>nice</b> 66:15,18 <b>nights</b> 13:10 <b>nih</b> 208:15 <b>nine</b> 99:3 188:3,6 188:7,17,18 244:2 <b>ninety</b> 48:17,18,20 <b>nodding</b> 10:10 192:18 <b>nods</b> 9:12 <b>non</b> 54:10 159:9 235:20 <b>nonconforming</b> 177:20 178:1	<b>nonconformity</b> 5:23 223:18 224:6 <b>nonscientific</b> 133:1 <b>noon</b> 10:2 <b>norm</b> 149:4 <b>normal</b> 81:22 136:9 <b>norsworthy</b> 24:15 <b>north</b> 1:1,9 2:19 2:20,22 4:8 6:17 78:15,24 128:2 <b>notary</b> 249:6 250:14 253:13,19 <b>note</b> 9:19 10:24 11:2 65:1 75:13 116:22 122:2 166:11 200:1 251:10 <b>noted</b> 48:1 208:17 253:7 <b>number</b> 4:2 5:2 32:17 34:20 35:4 42:15 47:14,17 49:2 55:1,2 60:20 71:18 75:10 83:10 127:11 130:1 141:20 144:24 145:14 162:23 172:1 179:5 183:13 184:23 210:13 215:25 219:5 <b>numbered</b> 210:14 <b>numbers</b> 4:9 49:3 49:8 78:17 79:15 107:10 141:5 199:8,18 242:10 <b>numerous</b> 99:3 <b>nurses</b> 37:5
<b>n</b>	<b>n</b>		
<b>n</b> 6:17,17 14:6 16:2,5,6 104:19 148:25 170:12 192:8 <b>n.e.</b> 2:6 <b>nainggolan</b> 122:11 123:8 <b>naive</b> 31:5 <b>name</b> 6:5 7:9 20:23 24:6,12 29:15 32:2,23 41:11,18,21 43:5 60:6 61:11,17 63:19 149:2,5,11 223:7 <b>named</b> 164:24 249:9 <b>names</b> 8:22 61:13 62:10 193:19 230:7 <b>nancy</b> 16:5 <b>nation</b> 36:19 <b>national</b> 19:13,14 138:6 144:21 145:13 205:10 207:5 208:1 <b>natural</b> 151:3 181:6,7,9,10			

[nutrient - okay]

Page 31

<b>nutrient</b> 218:23	<b>objective</b> 72:13	157:25 163:11	86:1,6,16 89:23
<b>o</b>	<b>observations</b>	165:7 170:2	90:1,14,18 91:5,9
<b>o</b> 104:19 170:12	118:1 119:16	175:20 177:6	91:16,24 92:6,13
237:19	120:4,8 128:1	181:17,22 182:2	93:16 96:22 97:7
<b>oath</b> 7:15	<b>observe</b> 173:22	183:25 189:21	98:9 100:12
<b>obesity</b> 5:19 217:9	<b>observed</b> 122:6	200:4 204:10	101:21 102:9
217:18 218:7	<b>obstacle</b> 89:1	205:4 220:3	104:1 106:5,14
222:14	<b>obtain</b> 227:11	229:15 230:25	107:9,11,14,16
<b>object</b> 75:5 228:10	<b>obtained</b> 155:16	236:15 242:18,18	108:9 109:20
236:14,19 240:19	<b>obviously</b> 100:3	245:7	112:22 114:1
241:20 242:6	176:5 193:21	<b>ohio</b> 1:18 70:19	116:8,22 117:6,10
<b>objection</b> 11:12,23	241:14	249:2,7 250:7,15	117:22 118:5,25
15:14 34:11,19	<b>occasional</b> 28:11	<b>okay</b> 7:17,20 8:1,5	119:18,24 120:7
45:7 54:20 55:24	40:5,5 46:25 47:4	9:21,22 10:6,9,12	121:14 122:16
60:18 66:5 67:2	<b>occasionally</b> 36:17	10:17 11:17 12:2	123:21 124:1,5,23
67:14 70:1,9,13	38:12 52:17 58:4	12:12,21 13:18	125:22 126:3,9
72:6 77:19 81:11	<b>occurred</b> 207:23	14:7,14,25,25 15:6	127:1,7 128:3,6,9
84:25 85:8 89:4	<b>och</b> 4:22,23 145:3	15:11,22 17:2,24	131:20 132:2
93:7 96:14 97:6	145:4	18:15,24 19:9,12	134:15 137:25
100:11 102:16	<b>offer</b> 220:20	19:22 20:2,7	138:1,4,17 139:14
104:8 110:13,23	<b>offered</b> 24:2 50:2	21:13 22:8 23:1,6	140:3,11 141:4,23
113:23 114:5	201:1,5	23:9,9 24:21 25:7	142:2,10,16,21
117:20 118:11,16	<b>offering</b> 91:12,24	25:12,19,22,22	143:12,17 145:8
119:6,22 133:18	92:16 187:13,17	28:4 29:14 32:9	145:12,18,21
134:3,12 137:24	<b>offers</b> 90:19	33:3 34:13,16,25	146:16,16,24
143:22 144:6	<b>offhand</b> 215:24	35:8,17,21 36:1	147:20 148:21
149:17 152:5,16	<b>office</b> 2:15 238:20	39:13 40:14 41:17	149:16 150:16
156:12 159:17	250:6	41:20 42:21 46:15	151:13,25 152:7
168:9 173:10,14	<b>official</b> 1:8	46:24 47:3 48:6	152:17 155:5,7
174:6 175:9 176:3	<b>officially</b> 32:21	48:23 49:25 52:11	156:4,7,13 157:5,8
176:14 178:6,13	38:23	53:2,11 54:14	157:25 159:13,23
183:21 184:22	<b>oftentimes</b> 88:21	55:4,13,18 56:25	161:2,4,5 162:14
187:4,19 188:5	<b>oh</b> 10:19 14:7 16:6	57:6,17,22 58:18	163:21 164:23
193:13 198:7	16:15 21:11 25:16	58:21,25 59:4,5,7	165:2,4,11,24
201:3 207:1	25:19 37:18 43:2	59:12,19,25 60:11	166:9,14,16 167:2
210:11 218:3	52:14 53:2 80:20	61:19,23 63:12,24	167:10 168:4
220:24 222:11	96:23 97:10 99:21	64:8,11 65:14	169:25 170:10,20
224:21 225:13	106:14 115:22	69:13 74:10 75:3	171:1,10,13
226:3 232:4	116:10 125:21	75:8 76:3 77:25	172:14,18,21
<b>objections</b> 75:10	127:10 135:18	78:2,6,21 79:7,12	174:7 176:17,20
75:12,20 107:25	150:16 156:4	79:24 80:3 81:5	177:7,13 181:2



[okay - page]

Page 32

182:1,16,16 183:2 183:14,15 184:6 184:14 187:12 191:13 192:3,19 192:21 193:7,7 194:24 195:2,23 196:15,19,22 197:2 198:23 199:6,11,16,21 200:6,10,11,24 202:1,2,5,12,21 203:10,16 204:7 204:11 205:5 206:19,23 207:3 207:10 210:12 211:3,11,16,21 212:15 213:19,23 215:3,7,13,23 217:3,15,21 218:6 218:12,14,19 219:4,9 220:6,12 220:18 224:10,13 224:13,15 226:19 227:3 231:10,14 244:14 245:7,10 246:5,8,12 247:9 <b>old</b> 27:12 47:8,9 49:18 52:15 114:15 136:9 178:25 179:10 221:12 238:13,14 238:14 239:1 <b>old's</b> 184:8,8 <b>older</b> 34:3 47:12 178:22 183:16 <b>olds</b> 178:8 183:16 191:21 <b>once</b> 50:20 93:14 158:4 179:8 204:3 216:7 244:11	<b>one's</b> 81:25,25 115:4 188:23 <b>ones</b> 7:13 8:5 16:12 28:21 193:1 193:2 214:8 <b>oneself</b> 246:25 <b>ongoing</b> 66:17 94:13 <b>online</b> 139:24 140:2 173:23 <b>onset</b> 4:15 116:18 117:1 120:9,14,22 120:24 121:10 197:17 <b>onward</b> 39:9 <b>open</b> 14:2,12 <b>operated</b> 238:19 <b>operations</b> 99:10 <b>opinion</b> 97:14 132:1 187:9,13,17 214:15,16 233:11 246:8 <b>opinions</b> 9:4 12:2 12:6 16:13 91:13 91:25 92:15 122:20 231:12 <b>opportunity</b> 95:19 144:12 168:11 <b>opposed</b> 8:8 9:4 100:1 125:12 163:12 246:10 <b>opposite</b> 92:20,24 96:7 175:16 <b>opposition</b> 9:13 <b>opt</b> 247:5 <b>optimistic</b> 224:25 <b>order</b> 30:21 62:8 182:6 214:11 240:8 <b>ordered</b> 248:12	<b>ordinary</b> 36:19 <b>organization</b> 30:6 131:4 <b>organizational</b> 228:14 <b>orient</b> 225:20 <b>orientation</b> 5:23 223:17 224:5 <b>oriented</b> 37:7 <b>original</b> 77:20 248:12 <b>originate</b> 128:20 <b>originated</b> 128:21 <b>origination</b> 209:17 <b>ought</b> 54:24 71:14 95:25 236:1 242:21,22 <b>outcome</b> 18:13 72:9 85:21 180:21 180:21 216:24,25 235:17 <b>outcomes</b> 83:13,13 109:23 111:7 195:14 232:17 <b>outgrow</b> 239:6 <b>outlets</b> 197:8 <b>outs</b> 117:23 <b>outside</b> 22:19 149:4 158:11 <b>outweighs</b> 83:12 <b>overall</b> 54:16 159:2 <b>overdose</b> 167:14 <b>overlap</b> 31:16 <b>overweight</b> 222:13 <b>owned</b> 42:12 <b>owner</b> 62:6 <b>owners</b> 62:5,6 <b>ownership</b> 62:18	<b>p</b> <b>p.m.</b> 247:14 <b>pablo</b> 196:19 <b>pachankis</b> 13:12 148:17 160:3 <b>page</b> 4:6 15:23,25 16:1,3 18:24,25 19:1,15 20:2 23:10,11,12 25:23 25:25 28:8,10,17 35:3 40:24 46:16 57:7,18 58:16,16 59:18 62:23 63:5 63:14 73:11,13,14 74:5 76:4 79:15 79:15,20 80:4,10 89:19 90:4,8,9 92:11,13,14 96:17 103:21 104:21 106:3,8 107:10,17 113:2,3 120:5 125:14,15,20 126:5,6,7 128:9,10 133:2,4 138:1,3 141:5,9 142:23 144:16,18,19 146:18 147:4,6 151:10,16 155:6,8 157:22,24 161:6 163:1,2 164:8,14 164:18,19,22 165:5,6,12 170:17 171:2,7,9,14,14 172:19,22,23 173:20,20 176:18 176:21 177:3,8,8,9 182:8,10,11,15,17 182:24 190:2,14 195:1 196:22 199:17,17,18,19 203:19 205:1,3,15
--	---	---	--

211:8 216:2 218:13,16 219:11 223:12,13,23,23 223:24 227:14 230:20,23 252:4,7 252:10,13,16,19 <b>pages</b> 15:24 79:16 103:22 157:22 182:1 <b>paid</b> 41:10 42:17 44:22 88:15,17,20 <b>palko</b> 4:21 140:17 141:14 <b>paper</b> 14:1 78:8 158:9,19 170:1 195:23 204:13 214:10 <b>papers</b> 13:3,13,17 13:19 37:3,14 159:9 205:9 <b>paradoxes</b> 87:21 <b>paragraph</b> 16:2,4 16:5 28:9 35:3 46:16 92:13 96:22 103:23 113:4 126:8 133:4,6,6 134:18 141:20,24 142:22 151:11,16 155:9 161:7 172:22 173:19,22 176:21 177:2,10 177:14 194:25 195:3,20 196:23 199:25 211:12,14 213:23 218:16 228:4 231:9 <b>paragraphs</b> 103:16 228:5,8 <b>parameter</b> 5:22 223:16 224:4	<b>parameters</b> 93:19 153:17 <b>paraphilia</b> 21:19 <b>parent</b> 4:13 116:15,24 117:18 120:7,11 121:7,16 121:17,20,21,24 122:3 187:22 235:22 246:17 <b>parent's</b> 119:9 136:15 <b>parental</b> 120:4 127:18 197:7 240:4 246:14 <b>parentheses</b> 141:8 <b>parents</b> 49:15,20 52:18 53:25 58:1 103:8 112:11 117:12,15,18,21 117:24,25 118:17 118:19 119:12,13 121:1,19 136:14 175:2 191:6,7 222:18 239:17,22 246:3,16,16,20 247:7 <b>part</b> 22:6 27:22 33:10 41:10 44:19 44:22 50:4 55:4 56:7,9 68:14 70:24 98:25 109:25 110:9 115:24 144:14 146:6 160:7 194:14 196:4 199:12 208:18 214:2,23 226:15 234:2 <b>partially</b> 176:4 <b>participate</b> 105:10 106:24	<b>participated</b> 28:1 <b>participating</b> 116:2 <b>particular</b> 13:4 17:10 27:3 37:11 39:7 66:23 71:7,7 73:24 76:15 146:5 234:10 <b>particularly</b> 175:24 238:6 <b>partners</b> 185:24 <b>party</b> 250:3 <b>pass</b> 92:20 <b>passage</b> 239:14 <b>passed</b> 101:12 <b>passion</b> 229:14,17 229:20,21,22 230:1,1 <b>passionate</b> 229:15 229:16 <b>pathology</b> 185:1 <b>pathways</b> 99:4 100:8 <b>patience</b> 33:10 138:20,22 <b>patient</b> 37:11 51:2 58:1,6 67:1,10 68:10 69:19 70:4 70:12 72:3,4,7,8 72:11,19,25 74:23 74:24,25 75:1 77:12,13,14,15 84:6 87:7 88:9 95:5,5,21 114:24 152:3 167:21 174:25 176:10,15 211:23 225:12 232:12 <b>patient's</b> 72:20 73:5 175:2 195:16	<b>patients</b> 43:15 45:20 46:1,18 47:6,21 48:7,15,19 48:21,21,25 49:6 50:13,17 51:7,11 53:4,12 55:11,21 56:10 57:23 58:8 60:14 63:24,25 65:21 66:2,12,22 70:19 83:18 87:17 88:14 95:13 103:3 103:4 113:10 114:12 115:22 133:10,14,24 134:7,24 138:7 147:8,16 159:3 166:17,21 167:3 167:11 168:6 169:12 171:14,18 172:6 173:2 174:2 175:1,4 176:9 193:8 195:17 225:4,21,23,25 231:18,23 233:15 237:1,3 238:19 245:25 <b>pattern</b> 99:6 <b>patterns</b> 194:4 <b>pause</b> 121:11 142:11 217:3 <b>pausing</b> 210:12 <b>pay</b> 42:20 70:25 82:14,15 226:16 229:7 <b>peachtree</b> 2:6 <b>pediatric</b> 5:19 188:9 217:9,18 218:7 223:8 <b>pediatrician</b> 99:8 <b>pediatricians</b> 130:4,17
---	---	---	--

<b>pediatrics</b> 43:9 44:2 180:17	164:3 168:16,18 169:16 171:24	<b>perfect</b> 10:22 144:10	198:5 201:5
<b>peer</b> 108:10 109:11,13,15,17 109:19 110:19 111:24 124:7,10 124:13,17 131:23 131:24 159:9 205:14 212:2,5,7,7 213:1,2,8,9 231:15 232:1,8,15,22 233:12	175:10,12,14,24 176:1 178:1 184:10 188:14 191:8 193:10,20 199:3,5,5 200:14 200:22 201:9 208:16,25 209:4,5 216:12,13,15,16 216:19 222:22 228:25 230:5,13 234:6,10 236:4,9 237:15 239:6 240:5,6 241:24 242:4,8,11,16,24 243:2,20 244:22 245:4,4 246:22	<b>perfectly</b> 7:22 99:11 <b>perform</b> 92:24 <b>period</b> 52:1 85:23 85:25 93:15,16 94:25 148:1,10 169:17 192:14 <b>periods</b> 141:15 <b>permanent</b> 143:3 <b>permanently</b> 96:23 97:1 <b>permit</b> 144:7 <b>perpetuity</b> 204:3 <b>persist</b> 172:11 173:7,12 179:10 192:25 193:2 214:25 <b>persisted</b> 134:9 135:17 137:18 166:17,22,24 192:13,21 <b>person</b> 24:8,9 40:6 49:19,19,23 50:11 52:21 67:22 71:8 82:6 84:8,9 88:9 93:10 94:12,16,21 101:1 115:14 127:2 135:20 137:5,7 143:1,5 167:25 172:4 180:12 223:6 224:19,23,23 225:2,6,16,16,18 226:6,15 229:15 229:16 234:5 <b>person's</b> 97:1 222:19 <b>personal</b> 64:20 93:11 197:6,12	<b>personally</b> 50:14 52:18 59:9 84:5 94:2 234:15 <b>personhood</b> 136:16 <b>persons</b> 5:3,17 154:17,25 155:14 155:22 156:9 164:6 174:24 213:14,21 215:9 217:24 220:23 <b>perspectives</b> 121:21,22 <b>pertained</b> 207:11 210:5 <b>pertaining</b> 222:6 <b>pervades</b> 87:22 179:17 <b>ph.d.</b> 130:18 157:9 227:9 <b>ph.d.'s</b> 100:20 <b>pharmaceutical</b> 19:2 129:11,24 <b>pharmaceuticals</b> 236:12 <b>phd</b> 101:8,9 <b>phenomenon</b> 58:3 120:10,18 195:24 <b>phone</b> 6:16 61:8 101:20 <b>phonetic</b> 83:25 185:16 188:16 <b>phrase</b> 11:18 131:18 166:18 <b>physical</b> 92:22 185:12 <b>physically</b> 185:15 <b>physician</b> 100:4 189:24
<b>peers</b> 39:3,3 180:23 185:15,21 186:1,1 235:5	<b>people's</b> 112:3 129:22 154:7 <b>perceive</b> 95:7 <b>perceived</b> 4:14 116:17,25 247:6 <b>percent</b> 24:5 35:25 36:11 47:5,21 48:18,20 50:4 54:7 99:7 108:21 108:24 129:17 162:21 163:11,12 163:13 179:6,15 179:16 192:20,24 233:24 234:23,24 240:21 244:22 245:1,1,5,8,10,15 <b>percentage</b> 36:2 48:7,15 49:9 53:12,20 54:5 55:21 61:4 192:13 231:18,22 232:24 233:14 236:3 242:4,7		
<b>penis</b> 60:9			
<b>people</b> 11:5,20 12:10 17:6 19:10 21:21 31:7,12,24 31:25 32:17 38:15 39:24 40:7 42:12 49:10,14 50:22,24 52:11 56:5,6 60:20,24 61:7 66:7,10,13,14 72:23 83:11 84:24 85:6 88:11 95:15 95:17 96:4,8,9 100:16,19 101:6 102:25 108:13,17 108:21,25 109:13 109:23 110:6 111:11 112:8 115:6,7,19 124:11 128:24 129:2,17 130:9 132:4,8,8,25 140:7 143:14 144:23 149:24 150:15,24 151:5,6 152:2,11,21 159:16 160:1			

<b>physicians</b> 81:20 130:4 <b>physiology</b> 71:20 81:18 82:1 <b>pick</b> 38:16 179:5 <b>picture</b> 123:15 125:24,25 126:1 <b>piece</b> 100:2 <b>pile</b> 172:17 <b>place</b> 47:15 141:7 200:7 249:20 <b>plaintiff</b> 2:2 <b>plaintiffs</b> 1:5 6:14 6:20,23 7:10 73:22 76:13 78:3 91:7,10,13 <b>plan</b> 2:14 4:8,9 78:11,16,17,24 79:1,9 81:6 <b>play</b> 88:7,20 179:2 <b>please</b> 6:25 8:9,16 9:18,24 15:8,23 33:19 53:15 57:17 63:14 73:10,15 79:18 80:4 89:25 90:8,25 92:11 93:2,24 96:16 104:21 105:16 107:12 116:22 133:3 137:25 141:4 146:18 155:6,7 157:5,14 157:21 166:11 169:10 171:1 181:11 204:10 206:19 211:6 219:11 223:12 227:11,12 228:12 229:3 246:15 <b>plus</b> 59:10	<b>poetic</b> 99:16,20 <b>point</b> 33:15 34:8 41:15 79:20 80:18 87:13,24 104:5 113:19 116:9 151:14 173:25 209:11 216:10 218:24 226:4 <b>poiret</b> 185:16 188:16 <b>policy</b> 129:3 187:6 228:13,14,15 <b>political</b> 74:12,14 76:25 77:2 187:8 187:15 207:23 209:12 <b>politics</b> 85:16 181:4 187:21 189:6,7,10,12 <b>poor</b> 218:23 <b>population</b> 111:17 147:19 148:14 149:25 150:24 151:4 155:15,18 161:10 <b>populations</b> 148:3 <b>portion</b> 227:19 231:11 <b>portions</b> 75:6 <b>portraying</b> 179:12 <b>position</b> 228:24,24 230:15 <b>positions</b> 13:22,23 <b>positive</b> 18:13 81:3 83:10,11 93:12 <b>possibility</b> 235:16 239:22 <b>possible</b> 129:14 238:25	<b>possibly</b> 84:21 235:5 <b>post</b> 161:9 <b>potentially</b> 127:22 <b>powerful</b> 38:7,19 <b>ppo</b> 79:1 <b>practice</b> 5:18,21 5:22 42:8 48:14 50:5 55:5 61:11 61:11,17,21,24 62:1,4,7,9,18 63:18 64:1,20,23 65:1,9 69:18 87:2 87:4 88:13 102:10 177:23,25 182:18 202:3,7,10 213:15 213:22 215:10 217:11,20,22 218:9 223:16 224:4 244:20 246:1 <b>practices</b> 132:10 <b>practitioner</b> 69:23 <b>pre</b> 234:17 <b>predetermined</b> 82:23 85:20 <b>predominant</b> 49:22,23 83:13 <b>preferred</b> 132:18 <b>pregnancy</b> 103:9 <b>premature</b> 38:13 <b>premorbid</b> 155:19 <b>preparation</b> 13:3 13:14,15 14:16 205:11 <b>prepare</b> 12:22 13:8 17:9 <b>prepared</b> 66:14 130:17,18,18 205:6	<b>preponderance</b> 127:17 <b>prepubertal</b> 177:23 182:18 183:7 192:20 <b>prescribe</b> 218:20 <b>presence</b> 249:15 <b>present</b> 2:24 6:7 37:12 38:5 40:8 45:25 46:2 137:7 142:7 143:10 163:6 165:14,14 168:22 243:19 <b>presentation</b> 168:19 <b>presented</b> 37:2,16 37:19 38:12,16 243:2 <b>presenting</b> 124:25 126:12 127:17 154:22 193:24 239:17 <b>presidency</b> 128:23 <b>press</b> 116:11 <b>prestigious</b> 13:7 <b>presume</b> 57:16 126:24 216:8 <b>presumptuous</b> 51:4 <b>pretty</b> 26:22 135:22 162:21 <b>prevalence</b> 17:6 <b>prevent</b> 10:14 179:19 <b>preventing</b> 73:18 76:7 179:19 <b>prevention</b> 5:20 217:10,19 218:8 <b>previous</b> 18:5 21:24 25:16 45:23 59:7 62:6 103:15
---	---	---	---

[previously - psychiatrists]

Page 36

<b>previously</b> 40:25	84:2,3 89:2	<b>professions</b> 27:2	<b>provide</b> 12:3,17
<b>primarily</b> 33:15	109:25 111:21,22	<b>professor</b> 35:10,14	57:23 66:24 93:17
33:17 40:2 47:11	134:4 169:22	35:17 37:25 39:17	94:10 112:16,21
197:4	179:16 189:1,2	39:18,19 44:20,24	114:3 121:8
<b>primary</b> 100:25	<b>problematic</b> 22:1	46:13 65:4 81:3	144:11 190:18
200:3	<b>problems</b> 21:18,18	202:13	206:2 224:16,18
<b>principal</b> 19:19	26:24 56:8 71:12	<b>professorship</b>	226:1
<b>principle</b> 81:19,21	130:14 185:18	42:19	<b>provided</b> 7:2 11:5
85:13 89:7	193:5 241:15	<b>program</b> 21:20,21	13:4 22:22 26:6
<b>principles</b> 31:18	<b>procedure</b> 7:3	43:12 44:14 63:14	54:16 73:24 74:20
130:7 141:19	86:22 95:18 248:7	63:20,21	76:15 77:8 99:16
<b>printout</b> 63:5	<b>procedures</b> 92:19	<b>programs</b> 4:7 44:3	99:20 124:6
89:18 90:3 202:23	92:21,23 231:19	62:24 63:6 65:5,5	<b>provider</b> 224:15
203:21	231:20,23,24	<b>prohibit</b> 143:19	224:18
<b>prior</b> 82:4 102:20	<b>proceed</b> 67:23	144:3,8	<b>providers</b> 5:14
110:16 127:20	<b>process</b> 30:3 38:21	<b>prohibiting</b>	196:12,18
138:12 174:14	45:23 58:3 74:14	179:24	<b>providing</b> 42:18
239:15	77:2 95:19 96:3	<b>prohibitive</b> 66:15	70:5 112:9
<b>priorities</b> 208:1	111:1 112:1 137:6	<b>project</b> 210:6	<b>provision</b> 159:14
<b>prisoners</b> 161:1	171:23 205:1,8	<b>promise</b> 138:17	<b>prudence</b> 185:9
<b>private</b> 20:4 48:14	208:8,8	<b>promulgating</b>	<b>prudent</b> 111:18
50:5 55:5 61:10	<b>processed</b> 31:3	130:5	112:2 152:21
61:23 62:1 63:18	<b>processes</b> 97:16	<b>pronounce</b> 61:14	186:2
64:11,16,20,22,25	113:12	149:1 223:7	<b>psyche</b> 223:5
65:9 88:13 168:24	<b>produce</b> 229:20	<b>pronounced</b> 18:8	<b>psychiatric</b> 11:8
<b>privately</b> 193:19	<b>produced</b> 205:13	148:24	12:14 26:8 28:2
<b>privilege</b> 15:17	<b>product</b> 137:2	<b>pronunciation</b>	38:24 39:22 42:8
<b>pro</b> 19:3 129:20	<b>productive</b> 180:6	149:4	42:18 54:17 57:25
199:2	<b>profession</b> 85:12	<b>proposed</b> 80:2	66:16 103:6
<b>probably</b> 8:21	87:22 101:4 109:6	206:3,7	111:25 155:11,20
9:15 26:22 33:25	189:2,3	<b>proposing</b> 205:21	158:8 161:13
36:11 52:25 55:17	<b>professional</b>	<b>prospective</b>	177:5 202:23
58:19,20 59:24	102:20 129:8	153:17	203:21,24 208:10
99:9 100:17	188:22 189:22	<b>protocol</b> 145:25	208:11,19,25
124:15 132:5	221:7 222:21	146:7 186:15,25	209:3 233:1
139:23,24 147:23	223:2 225:7,8	<b>protocols</b> 110:22	234:25 235:1
192:2 216:6,6	<b>professionals</b>	<b>prove</b> 225:17,18	<b>psychiatrist</b>
233:22	12:18 21:21 38:22	228:21	123:21 169:17
<b>problem</b> 9:1,17,17	88:6 89:2 130:3	<b>proven</b> 82:16	221:18
32:16 39:6 60:23	130:19 131:8,8	114:10	<b>psychiatrists</b>
75:18,25 81:23	225:9 229:1		43:22 44:4

<b>psychiatry</b> 22:7 27:3 35:10 36:18 37:4 43:8 44:1,1,5 44:11,13,14,15 46:3 65:4 100:20 100:21 192:9 209:12 <b>psychological</b> 28:13 79:21,25 92:22 111:19 115:2 176:22 177:18,24,25 185:12 237:6 <b>psychologically</b> 70:7 74:19 77:7 136:11 191:3 <b>psychology</b> 37:4 38:25 39:23 <b>psychosocial</b> 138:10,11 155:12 188:15 <b>psychotherapeutic</b> 52:19 111:20 112:10 <b>psychotherapist</b> 168:16 <b>psychotherapists</b> 32:15 <b>psychotherapy</b> 32:4 53:5 58:2 66:9 80:1 86:10 90:21 195:7,17 <b>pubertal</b> 220:8 <b>puberty</b> 31:15 115:3,3 127:20 142:3,12,17 146:2 173:6,8 183:16 184:7,15 185:10 185:11,11 186:4 186:13,21 187:11 187:23 188:12	190:11,18 211:18 220:15,17 222:8 235:8,25 236:11 238:15 <b>public</b> 2:19 6:18 111:12 159:10 206:7,10 209:10 249:6 250:14 253:19 <b>publication</b> 30:11 30:17 127:15 <b>publications</b> 31:20 31:20 <b>publish</b> 22:11 23:2 212:10 <b>published</b> 13:11 16:15 108:10 117:2 124:16 145:14,18 147:24 148:12 158:5 159:9 192:8 195:25 198:25 203:17 212:2,4,19 212:22,23 213:2,6 231:15 232:1,8,15 232:22 233:12 237:20,23,25 238:1 <b>purport</b> 199:2 <b>purportedly</b> 117:14 <b>purpose</b> 75:13 <b>purposes</b> 14:22 31:17 56:23 62:25 78:19 89:14 104:14 116:19 123:1 139:11 140:18 145:6 154:19 156:21 161:22 170:8 196:13 202:18	213:16 217:13 223:21 <b>pursuant</b> 248:3,6 <b>pursuit</b> 114:7 <b>put</b> 31:6 55:25 68:22 85:25 92:9 94:17 95:9 97:8 112:23 130:10,24 131:16 140:11 144:16 184:5 185:14 208:15 221:11 <b>putting</b> 153:25 236:22 <b>q</b> <b>qualification</b> 221:24,25 <b>qualified</b> 32:17 249:8 <b>qualify</b> 87:8 178:14 <b>quality</b> 14:3 153:6 204:14 214:4,6,7,9 214:14,22 216:14 216:15 220:21 221:1 222:4,8 <b>quarter</b> 125:19 144:19 <b>quell</b> 208:2 <b>question</b> 9:20,25 10:6 13:1 16:17 16:24 17:10 18:6 22:14 25:17 30:13 30:15 31:11,15 34:24 43:10 48:10 49:21 50:1 51:24 53:15,23 56:1,11 57:22 58:8,11,15 58:18,21,25 59:5,7 59:12,12,25 60:5 60:11 63:13 69:3	70:14,16,18 71:4 71:14,23,25 73:3 73:16 74:1,4,7,10 74:16 76:5,22,24 77:4 83:16 84:14 85:2,3 99:23 104:22 105:3,7,17 105:19 106:16,20 106:23 107:2,20 109:7 116:7 118:12,22,24 119:2,17 122:17 126:25 133:20 134:14 139:3 147:10,12,17 151:3,8 165:21,22 166:1,25 168:25 169:2,5,6,8 171:20 171:22 172:2,5 175:18,21 181:1 182:16 183:4,23 183:24 184:6 186:10,20 190:7 190:18,20,25 191:7 197:24 198:8,12 200:15 204:7 214:3 225:21 230:17 237:4 238:8,8 239:10,13 241:17 241:22 242:10,16 <b>questioned</b> 111:7 <b>questions</b> 5:15 9:18 70:17 75:16 83:15 136:18 198:20 202:17,25 203:23 223:9 237:10 242:23 244:8,10,12 <b>quick</b> 163:1 193:18
---	---	--	---



<b>quickly</b> 57:21 175:14 189:25 209:10 212:19 238:4 <b>quite</b> 10:24 44:7,8 162:20 <b>quotation</b> 124:24 126:5 <b>quotations</b> 97:10 <b>quote</b> 126:10 189:18 197:2 208:7,8 <b>quoted</b> 94:17 125:8 126:4 127:2 223:6 <b>quotes</b> 97:9 <b>quoting</b> 161:1	49:15 60:12 69:2 69:6 73:14 75:3 75:17,20 77:17,23 77:23 80:24 92:25 105:24 107:7 108:6 113:12 117:5 119:24 121:12 122:6 125:23 126:11 127:13 134:18 138:15 139:23,25 142:8 150:9 152:22 156:1 157:13 159:11,19 159:20,22 162:23 165:20 166:3 172:12 183:12,23 183:24 184:5 188:10 191:10,11 199:13 206:17 219:2,22 220:1 227:19 228:8 233:10 238:3 251:9 253:5 <b>reading</b> 57:19,21 77:20 80:22 105:15 106:2 120:3 143:10 158:2 160:20 182:22 222:1 227:23 <b>reads</b> 80:6 <b>ready</b> 226:25 <b>real</b> 39:6 83:9 171:15 174:15,16 174:23,23 175:5 <b>reality</b> 72:12 <b>realize</b> 169:25 <b>really</b> 49:7 56:10 94:22 208:8 213:23 233:17,21	236:22 238:3 243:3 246:16 <b>reason</b> 67:8 73:5 84:23 93:4 152:15 152:17,19 178:11 178:14,15,16,17 179:23 203:3 251:11 252:6,9,12 252:15,18,21 <b>reasonable</b> 187:10 <b>reasonableness</b> 83:7 <b>reasoned</b> 95:8 <b>reasoning</b> 133:1 <b>reasons</b> 152:25 179:22 241:23 <b>reassigned</b> 163:9 <b>reassignment</b> 5:4 5:9 11:21 148:1,9 148:19 153:1 154:17,25 155:14 155:23,24 161:9 161:19 162:2 164:7 165:18 <b>reassured</b> 223:1 <b>recall</b> 17:18 21:13 24:14,24 25:7,15 26:12 27:15 29:11 35:21 36:13 69:3 86:9,14 149:11 150:7 193:18 203:15 224:9 242:9 <b>recalling</b> 25:17 <b>receipt</b> 251:18 <b>receive</b> 211:18 <b>received</b> 19:2 20:3 22:9,9 35:18 92:4 147:8,16 <b>receives</b> 204:3	<b>receiving</b> 231:18 231:23 237:15 <b>recess</b> 40:20 91:2 101:24 147:1 191:17 227:7 244:5 <b>reclaimed</b> 173:24 <b>recognize</b> 57:6 126:1 149:6 170:17 215:4 223:3 240:2 <b>recognized</b> 98:18 158:4 194:5 234:25 <b>recognizing</b> 111:8 <b>recollection</b> 63:9 <b>recommend</b> 34:9 34:15,16 67:21 68:15,19,23 69:4 187:2,18,20,23 218:19 220:2 221:1,8,10 224:24 <b>recommendation</b> 4:20 60:19 68:14 69:16 95:24 96:2 112:21 140:15,23 142:12 143:13,18 174:13 215:16 218:2 219:5 220:21 222:4,7 226:14 <b>recommendations</b> 30:22 34:2 58:4,5 110:25 142:19 144:3 214:19,21 214:23 218:1 <b>recommended</b> 58:9 59:1,16,21 60:3 68:16 <b>recommending</b> 67:20,21 130:9
<b>r</b>			
<b>r</b> 200:8 252:3,3 <b>raised</b> 85:4 <b>raleigh</b> 2:22 <b>ran</b> 42:12 64:19 <b>randomized</b> 82:21 110:2 216:18 <b>randomly</b> 155:18 <b>range</b> 194:1,10 <b>rank</b> 214:11 <b>rapid</b> 4:15 116:17 117:1 120:9,14,22 120:24 <b>rate</b> 147:7,15 148:2,5,11,13,16 148:18,23 149:10 149:23 161:9 238:4,4 <b>rates</b> 159:2 161:13 179:14 <b>rationale</b> 101:10 <b>reach</b> 226:5 <b>read</b> 13:2,10,12 16:11,15 37:2,13			

[recommending - report]

Page 39

152:9,18 153:22 153:24 154:3,5 183:10,11 215:1 242:20 <b>record</b> 6:2,8 15:2 40:19,21 56:25 63:3 69:6,8,9,10 69:11 78:21 89:16 90:25 91:1,3 101:22,23,25 104:16 116:22 123:4 139:14 140:21 145:8 146:25 147:2 154:22 156:23 161:24 166:4 170:10 183:14 191:16,18 196:15 202:21 213:19 217:15 224:2 227:6,8 228:9 244:4,6 247:12 <b>recorded</b> 117:15 <b>records</b> 25:20,21 <b>recruited</b> 117:18 118:6 <b>redesigned</b> 238:17 <b>redo</b> 76:1 <b>redone</b> 71:12 <b>reduced</b> 62:5 179:15 249:14 <b>refer</b> 11:2 54:1 66:22 103:17 <b>reference</b> 56:18 131:1 135:2 160:17 191:25 207:3,16 <b>referenced</b> 249:13 249:18 251:6 <b>referencing</b> 151:20	<b>referral</b> 54:11 <b>referrals</b> 54:4 <b>referred</b> 53:3,9,13 53:20 146:5 220:15 246:6 <b>referring</b> 11:4,15 11:19 12:9 119:9 123:10 148:7,24 150:8 191:24 220:13 <b>refers</b> 59:2 72:15 <b>refinements</b> 108:3 <b>reflect</b> 18:21 75:14 121:7,20,22 122:5 <b>reflection</b> 46:8 56:7,9 <b>refuses</b> 224:18 <b>refusing</b> 224:16 <b>refute</b> 228:24 <b>regard</b> 207:14 212:24 <b>regarding</b> 17:19 144:22 155:20 177:22 182:18 248:2,11 <b>regardless</b> 194:9 <b>regards</b> 50:1 <b>region</b> 36:18 <b>registers</b> 155:17 <b>regular</b> 51:9,15,19 248:13 <b>regularly</b> 48:7,25 50:18,20,22 60:15 <b>reimbursement</b> 88:12 <b>reimbursements</b> 64:21 <b>reinvestment</b> 195:15 <b>rejected</b> 87:14,14 88:1	<b>relate</b> 20:8 <b>related</b> 13:9 19:7 19:10 28:14 37:14 54:11 66:3 67:11 80:8,24 81:8 140:25 167:4 184:3,4,4 209:16 <b>relatedly</b> 183:15 <b>relations</b> 165:16 209:11 <b>relationship</b> 121:24 129:9,13 <b>relative</b> 250:2 <b>relatively</b> 62:11 101:5 <b>relay</b> 13:18 <b>released</b> 138:6 206:20 215:9 <b>releasing</b> 220:14 <b>relevant</b> 37:3,14 <b>reliability</b> 208:10 232:10 <b>reliable</b> 195:6 197:13 231:16 232:2,9,16,23 233:13 <b>relied</b> 16:11 <b>relief</b> 210:24 <b>religious</b> 240:3 <b>relying</b> 127:2 232:11 <b>remainder</b> 228:4 <b>remaining</b> 188:16 <b>remedy</b> 210:18 <b>remember</b> 8:6,22 8:24 18:10 20:17 26:19 27:19 32:20 163:15 170:20,22 170:23 215:24 216:10 227:18,22 233:24 237:11	242:20 <b>remembered</b> 163:22,23 <b>remind</b> 9:16 <b>reminiscent</b> 130:13 <b>remotely</b> 6:7 <b>removed</b> 60:9 174:22 238:16 <b>renamed</b> 41:4 <b>renowned</b> 205:18 <b>reorienting</b> 207:6 <b>repeat</b> 10:8 48:10 84:21 119:1 <b>repeatedly</b> 94:16 113:19 <b>rephrase</b> 45:9 119:15 133:19 134:6 169:3 176:8 <b>report</b> 13:12 15:13 15:23 16:10,13,16 16:19 17:25 18:3 18:17,25 19:1,13 19:18 20:3 21:3 22:10 23:10,12,17 24:15 25:23 28:8 28:10 35:1,2 40:25 41:3 46:15 91:5 92:7,8,12,15 94:17 96:17 102:2 112:23 113:1 117:23,25 120:16 122:8 124:23 125:16,24 126:4 126:23 127:19 128:7,8,10,13,16 133:2,4,5 138:1,5 138:23 144:15,20 144:22 145:13 146:19 147:5 149:12,14 151:10
--	---	--	--



[report - right]

Page 40

161:5 172:18,20 174:9 176:18 191:24 194:25 195:5,13 196:22 207:4,24 211:6,6 223:5,12,25 230:24,25 231:12 237:16 <b>reported</b> 173:1 <b>reportedly</b> 147:7 147:15 <b>reporter</b> 3:10 6:25 9:10 <b>reporter's</b> 3:8 249:1 <b>reports</b> 4:13 13:6 96:25 116:15,24 121:7,16,18 123:16,17 195:7 195:18 196:1 197:7 <b>represent</b> 12:6 81:17 <b>represented</b> 163:13 <b>representing</b> 6:10 6:17 160:22 <b>represents</b> 207:19 214:18 <b>reprint</b> 120:2 <b>reproductive</b> 92:17,24 97:3 <b>republished</b> 117:8 <b>reputation</b> 62:9 <b>request</b> 9:24 <b>requested</b> 12:3 105:10 106:23 248:1,6,10 <b>require</b> 211:17 221:15	<b>required</b> 175:7 253:13 <b>requires</b> 7:17 181:5 <b>research</b> 22:10,15 22:16 23:2 109:22 120:19 141:16 145:25 146:6 147:21 158:2 197:14,20 205:8 207:7 208:1 210:5 231:16 232:2,9,16 232:23 233:13 242:3 <b>researcher</b> 158:5 <b>researchers</b> 113:8 158:3 205:19 <b>reservations</b> 68:9 68:10 <b>reserve</b> 22:5 35:5 35:11 42:23,23 43:16 44:21 46:4 89:18 90:4 <b>reserve's</b> 44:10 <b>residence</b> 88:7 <b>residency</b> 38:24 <b>resident</b> 37:16 39:25 <b>residents</b> 37:4,13 39:22 40:1 44:5 45:5,11,16,19 46:5 <b>resilience</b> 133:11 133:17 134:1,10 134:25 135:4,13 136:19 <b>resources</b> 4:11 89:13,20 90:5 <b>respond</b> 9:18 <b>response</b> 9:21 225:5	<b>responses</b> 9:11 10:21 123:24 <b>responsibility</b> 93:11 94:20 221:8 221:9,10 <b>rest</b> 126:2 171:22 180:4 182:2 <b>restate</b> 10:8 <b>result</b> 82:2 153:13 189:13 <b>resulted</b> 109:22 <b>results</b> 158:6,15 200:18 <b>retained</b> 3:10 11:24 <b>retractions</b> 124:9 <b>retransition</b> 194:19 <b>retrospectively</b> 23:21 <b>return</b> 61:8 73:8 92:6 193:24 195:8 195:10 241:17 251:13,17 <b>returned</b> 60:17 167:20 <b>returning</b> 48:24 48:25 161:2 204:24 <b>reversible</b> 188:13 <b>review</b> 8:3 13:21 29:5,21 31:17 124:7 140:9 157:6 192:3,5,17 205:25 206:1,4 216:12 248:2,6 251:7 <b>reviewed</b> 13:6,16 14:1,2 16:24 17:3 17:8 18:6 29:6 78:6,7 108:10 109:11,13,15,17	109:19 110:19 111:1,24 123:9,14 124:10,14,17 131:23,24 150:13 159:9 188:7 205:14,19 206:7 212:2,5,7,8 213:1 213:2,9,9 231:15 232:1,8,15,22 233:12 <b>reviewer</b> 28:11 <b>reviewing</b> 109:2 110:24 150:17 195:23 <b>revise</b> 70:14 <b>revised</b> 121:6 <b>revision</b> 205:6 <b>revisions</b> 206:8 <b>revulsion</b> 125:2 <b>ridiculous</b> 124:12 <b>right</b> 7:8 9:23 24:3 47:24 58:23 78:2 84:8 88:2 95:12 99:24 101:14 104:25 108:11 109:12,16 113:14 118:2 122:8 140:8 141:7,8 146:9,12 149:8 152:14 157:20,23 159:16 160:12 162:20 163:14,18 165:9 176:1 182:15 185:19 187:12 189:25 190:5,19 191:13 199:19 201:24 203:4,24 206:22,25 207:8 210:25 211:5,14 216:23 218:17 219:14 223:2
--	---	---	--

[right - see]

Page 41

231:7 247:10 <b>rights</b> 85:18 <b>risen</b> 61:12,18 62:3,10,14,15,16 <b>risk</b> 71:12 94:22 235:10 <b>risks</b> 70:5 74:18 77:6 92:22 93:3,8 93:13 94:1,4,13,15 95:16 96:2 <b>road</b> 10:23 <b>role</b> 38:23 92:24 175:16 <b>room</b> 42:4 234:9 <b>rotate</b> 45:16 <b>rough</b> 8:1,4 248:13,14 <b>roughly</b> 79:19 <b>rounds</b> 46:2 <b>routinely</b> 48:15 <b>row</b> 27:11 <b>rpr</b> 1:20 <b>rules</b> 7:3,11 248:3 248:7 <b>run</b> 13:14 44:18 229:4 243:1 <b>running</b> 35:24 243:1	<b>save</b> 70:23 <b>saving</b> 71:11 129:21 <b>saw</b> 47:6 53:17 <b>saying</b> 49:25 83:7 85:11 124:13 152:10 153:8 164:17 180:18 187:15,16 208:7 225:11,14,15 229:17 <b>says</b> 19:18 96:2 125:17 126:11 142:12 147:14 179:1 182:23 203:19 206:12 212:11 220:2 228:21 231:12 <b>scale</b> 46:12 <b>scenes</b> 130:22 <b>scheme</b> 130:22 <b>schizophrenic</b> 209:6 <b>scholars</b> 100:13,16 <b>school</b> 35:12 42:24 <b>science</b> 12:7 30:25 74:14 77:2 82:19 85:16 108:25 115:8 130:20,25 131:12 132:9,18 153:8,9,25 181:3,5 181:5,7 189:5,13 214:25 216:12,14 216:16 228:16,21 229:12,14 230:10 230:11 236:23 <b>scientific</b> 31:18,18 71:24 82:11 83:25 101:11 109:4 110:25 116:4,5,7 119:13 130:11	131:4 147:21 158:11 195:6 197:13 198:3,6 199:9 205:9,19,25 206:3,5,24 208:7,8 214:17,21 228:22 229:8 <b>scientifically</b> 71:17 110:6 114:10 115:18 131:10,12 145:25 153:2 180:13 242:3 <b>scientist</b> 123:19 <b>scientists</b> 111:6 205:12 <b>scope</b> 30:23 66:6 89:5 <b>screwy</b> 141:6 <b>scrotum</b> 60:10 <b>se</b> 36:21 169:23 221:14 <b>sea</b> 169:1 <b>seal</b> 250:6 <b>second</b> 25:8 39:11 69:8 90:8,10 105:14 107:15 128:19 141:24 150:22 163:5 164:8,22 172:4 173:21 199:24 200:7 218:7,17,24 219:14 227:16 239:14 <b>secondary</b> 200:3 <b>section</b> 80:19 90:10 96:18,25 119:25 120:2 121:12,14 127:15 138:23 141:14,21 158:1 165:5	199:25 <b>secure</b> 221:5 <b>see</b> 16:3 18:19 20:5 21:7 24:13 25:19 26:2,9 28:14 35:6 37:18 44:19 45:12,25 46:1,20,20,21 47:16 49:10,14,23 50:18,22,23 51:1,2 51:8,11 56:10 60:24 61:6 63:15 65:11 68:9 72:25 79:23 80:8,11,20 84:9 86:23 87:15 88:17,18 90:12,14 95:18 96:3,20 97:10 111:17 112:12 114:12,12 115:8,21 125:17 125:21,23 126:15 126:19 130:1 135:18 136:9 137:2 139:1,4 141:10,21,25 144:21,24 145:16 151:11 164:9,23 165:8 166:6 169:16,16 171:11 177:10,12,23 180:17 182:20,23 182:24 183:9,11 185:3,3,24 189:15 195:21 196:2,25 198:11 199:19 200:11 204:25 209:2 215:3,25 219:4,16,17,18 220:4 221:2,23 222:15 229:3 230:8 231:11
<b>s</b>			
<b>s</b> 2:3 6:17 104:19 192:8 252:3 <b>safe</b> 225:1 <b>safely</b> 224:25 <b>safety</b> 2:19 6:18 <b>salaries</b> 22:18 <b>salary</b> 65:7 <b>sample</b> 163:7 <b>sat</b> 7:21 8:2 <b>satisfied</b> 94:11 225:20,22,24			

[see - signs]

Page 42

235:20 237:18 238:8 242:11 245:22 246:1 247:2 <b>seeing</b> 45:20 49:1 50:12 54:2 <b>seek</b> 114:11 <b>seen</b> 15:3 46:25 48:8,15 51:21 54:24 57:3 60:15 61:7 63:6 79:3,5 89:21 96:4 115:14 117:3,4 123:15,15 131:22,25 139:17 141:1 145:15 155:2 157:3 162:7 171:25,25 184:23 184:25 188:10,11 193:8 196:20 203:12 212:18,18 218:10 224:7,11 225:21,25 245:4 <b>sees</b> 51:5 <b>segm</b> 31:22 32:25 33:1,11 34:5 110:21 111:4 112:8 <b>segments</b> 31:20 <b>selected</b> 155:18 <b>self</b> 234:12 <b>seminar</b> 37:1 <b>seminars</b> 36:21 <b>send</b> 141:6 <b>sense</b> 9:14 16:25 60:5 102:13 103:10 116:6 119:17 131:13 222:17 236:21 243:9,12 <b>sensing</b> 29:17,19	<b>sent</b> 108:15 130:2 251:14 <b>sentence</b> 59:2 67:16 68:22 125:17 139:2 141:24 144:24 147:6,14 151:14 151:16 161:7,14 162:4 163:5 165:12 173:21 189:19,19,20 195:20 200:7,25 221:24 227:23 <b>sentences</b> 134:19 <b>separate</b> 8:12 19:2 20:3,7,22,23 26:14 42:24 43:4,15 44:14,17 48:8,11 72:12 85:2,3 86:21,22 137:15 153:19 172:25 184:9 235:23 <b>separates</b> 235:19 235:20 <b>separating</b> 187:14 <b>september</b> 1:15 6:2 16:23 250:8 251:3 <b>sequence</b> 97:18 98:14 <b>series</b> 205:9,13 223:9 <b>serious</b> 83:24 <b>seriously</b> 201:15 <b>serves</b> 120:8 <b>services</b> 8:15,19 57:15 66:3,9,16,17 <b>set</b> 20:11 128:1 146:17 156:13 161:3 165:25 172:14 202:1	207:12 214:19 224:14 250:6 <b>seven</b> 7:25 26:5,7 26:13,15 27:10 <b>severe</b> 143:4 <b>sex</b> 5:4,9 11:21 38:15 58:6 80:7 80:23 83:6 92:16 92:25 96:19,23,25 97:12,20 98:10,22 99:1,25 100:13,21 100:24 101:3,18 125:2 142:25 143:3 146:3,9,12 146:13 147:25 148:9,19 153:1 154:17,25 155:13 155:22,24 161:9 161:19 162:2 164:6 165:18 193:25 195:16 236:17 240:1 <b>sexes</b> 179:4 <b>sexologic</b> 197:16 197:19 <b>sexual</b> 5:23 17:7 17:20 19:3,15 20:13,14,18,24 21:2,10,15,18,18 21:22,24 22:3,24 26:23 36:5 41:1 65:6 137:6 185:23 223:17 224:5 241:8 242:23 <b>sexuality</b> 20:12,25 21:9,25 26:9 27:17 28:14 36:4 45:2 <b>sexualization</b> 185:22	<b>sexually</b> 137:4 235:24,25 <b>shape</b> 30:21 <b>shaped</b> 247:1 <b>shaping</b> 135:25 <b>share</b> 200:13 <b>shared</b> 84:20 197:6,12 <b>sheds</b> 155:21 <b>sheet</b> 251:11 <b>ship</b> 226:10 <b>short</b> 97:19 146:21 <b>shortening</b> 32:22 <b>show</b> 4:14 83:8 116:17,25 127:19 158:15 243:14 <b>showed</b> 148:13 152:1 <b>showing</b> 56:25 63:3 78:22 89:16 104:16 116:23 123:5 139:14 140:21 161:24 196:16 202:21 <b>shown</b> 78:10 170:10 224:2 <b>siblings</b> 58:2 180:23 <b>side</b> 80:11 115:21 150:19 155:8 218:17 219:14 229:5,16 230:13 <b>sides</b> 229:6 <b>sign</b> 185:2 251:12 <b>signal</b> 219:18 <b>signature</b> 248:5 250:12 <b>signed</b> 251:20 <b>significance</b> 143:6 <b>signs</b> 4:14 111:15 116:17 117:1
---	--	--	---

<b>sihler</b> 20:4 22:20	<b>social</b> 92:22	104:12,19	194:24 196:4
<b>similar</b> 9:19 148:9	113:11 114:8,21	<b>soon</b> 105:5 106:18	200:4,5 204:1
158:25 200:23	114:22 115:5	204:19	207:12 218:15
<b>similarly</b> 11:17	120:10 122:9,12	<b>sophisticated</b>	220:3 223:23
70:3 151:15	173:3 174:7,10	82:10 83:24	224:16 225:23
176:22 177:15,17	178:4,12 183:6	102:23,24 118:19	230:22 245:13,16
<b>simonsen</b> 151:22	185:12,18 186:12	<b>sophisticating</b>	<b>sort</b> 33:23 129:22
151:23 162:8	193:5 228:13	38:20,20	209:8
<b>simplify</b> 133:20	233:9,16 234:2,3,3	<b>sophistication</b>	<b>sorts</b> 57:22
236:8	234:19 236:5	112:5	<b>soul</b> 223:4
<b>simply</b> 82:21	237:6 243:11	<b>sophomores</b> 49:13	<b>sound</b> 43:12 140:8
136:4 229:5	247:2	<b>sorry</b> 16:15 17:9	<b>sounds</b> 225:11
<b>sin</b> 240:2	<b>socially</b> 178:19	18:16,25 19:13	<b>source</b> 108:10
<b>sincerely</b> 99:22	234:14	21:11,12 23:10	109:12 115:11
<b>singh</b> 192:8,16	<b>societal</b> 246:9	28:25 29:1,18	213:2
<b>single</b> 235:22	<b>societies</b> 28:5	39:15 42:9 43:2	<b>sources</b> 111:22
<b>sip</b> 132:12	<b>society</b> 5:17,20	43:14 47:19 55:13	197:5
<b>sir</b> 7:24 25:4 26:4	30:7,7,8 31:22	59:15 65:22 73:12	<b>span</b> 238:10,11
113:2 172:21	32:6,23 33:5	74:8 79:13 80:10	<b>speak</b> 8:16 14:14
<b>sit</b> 115:7 238:20	211:13,16,21	85:22 87:2 90:3	83:12 93:23
<b>situation</b> 158:24	212:1,6,8 213:14	93:2 94:24 95:4	150:20
<b>six</b> 7:25 21:5 26:7	213:22 214:1	96:23 97:17 98:4	<b>speaking</b> 95:13
35:24 40:11 50:9	215:10 217:11,19	98:5 99:18 104:23	<b>special</b> 4:7 62:24
50:25 51:13,25	217:22 218:9	106:14 107:14,16	63:6 88:10
114:25	220:19,22	110:9,19 112:25	<b>specialists</b> 242:21
<b>skeptical</b> 71:6,9	<b>sociological</b> 28:13	117:16 118:21	<b>specializes</b> 52:16
<b>skeptically</b> 225:3	<b>sold</b> 62:7	120:5 122:13,19	<b>specialties</b> 28:12
<b>skepticism</b> 111:14	<b>solely</b> 28:18	123:11,23 124:15	<b>specialty</b> 108:23
201:17	232:11 233:21	133:3,5 138:15	<b>specific</b> 13:5 22:19
<b>skills</b> 134:2,11	<b>solutions</b> 1:17	141:5,12 142:11	36:1,7 37:14 60:1
135:1,4,13 136:4	111:23 251:23	142:17 146:10	60:6 210:8
136:20	<b>somatic</b> 5:10	147:12 149:9	<b>specifically</b> 12:3
<b>skipping</b> 73:19	159:1 161:20	150:9,21 152:9	12:20 13:8 22:15
195:19	162:2 163:7	155:6 158:10,18	27:20 28:2 31:14
<b>slightly</b> 120:1	165:19	164:10,16,21	35:23 36:14 67:11
226:11	<b>somebody</b> 114:19	165:6,7 167:15	167:3 212:25
<b>slowly</b> 71:25	223:6	171:7,8,17 174:10	<b>specified</b> 249:21
<b>small</b> 54:5 61:4	<b>somewhat</b> 27:8	176:11,24 177:6,8	<b>specify</b> 135:5
83:11 120:2	45:6 79:21	177:8 182:22	<b>spectrum</b> 47:23
<b>smart</b> 94:6	<b>soneeya</b> 4:12 8:10	183:2,10,19	125:5
	24:22 25:1,6,14	186:19 187:1	

<b>speculation</b> 127:25 <b>speech</b> 95:2 <b>spell</b> 14:5 149:7 <b>spend</b> 115:25 168:15 239:8 <b>spending</b> 45:19 <b>spends</b> 188:23 <b>spring</b> 33:4 <b>srs</b> 165:16 <b>ss</b> 249:3 <b>stabilize</b> 179:10 <b>stabilizing</b> 159:6 <b>stack</b> 181:13 <b>staff</b> 14:17 15:19 39:20 40:1,4 51:3 51:4,5 168:12 <b>stages</b> 36:6 <b>stand</b> 62:12 <b>standard</b> 103:5 107:22 112:20 226:5 <b>standards</b> 14:3 29:24 102:5,10,17 103:10,13,18,22 104:2,6 108:3,9,12 108:19 109:5,24 110:4 112:19 129:17 132:22 174:22 175:8 <b>stands</b> 198:12 <b>start</b> 9:20 39:15 57:19 58:11 63:25 117:16 133:22 141:13 171:8 182:10 186:17 200:4,6 224:1 225:24 <b>started</b> 20:18 33:6 42:12	<b>starting</b> 4:17 76:4 122:25 123:7 171:10 205:5 229:19 239:23 <b>starts</b> 120:3 151:15 195:3 223:7 <b>state</b> 1:8 2:14,14 2:19 4:8 12:7 70:18 74:13,13 77:1,1 78:16,24,25 79:1,8,9 94:1 185:14 216:12 249:2,7 250:15 <b>stated</b> 91:6 176:23 177:18 <b>statement</b> 46:22 109:2 143:24 144:2 147:10 160:16 207:4,11 207:14,16,17 208:5 210:3,3,4,5 <b>statements</b> 96:10 198:14,17 228:7 <b>states</b> 1:1 8:24 19:1 26:6 28:10 41:3 92:15 96:22 96:25 102:4 138:5 176:21 218:19 <b>stating</b> 158:19 207:17 <b>statistic</b> 126:3,20 <b>statistical</b> 207:18 <b>statistically</b> 241:2 <b>status</b> 155:21 200:15 <b>stay</b> 239:11 <b>steer</b> 226:10 <b>stenotypy</b> 249:14 <b>stepfather</b> 137:4	<b>stephen</b> 1:13 3:5 4:3,5 5:11 6:6 7:1 7:6 14:20 15:2 44:25 45:1 56:22 57:2,11 84:11 170:7,13 244:15 249:9 251:5 252:2 252:24 253:2,4,12 <b>stereotypic</b> 194:4 <b>stigmatized</b> 121:5 <b>stipulate</b> 210:20 <b>stipulating</b> 75:18 <b>stockholm</b> 156:20 157:2 <b>stod</b> 4:22 145:3 <b>stop</b> 60:11 65:12 101:19 240:12 <b>stopped</b> 64:23 158:13 160:24 167:16 227:23 <b>stopping</b> 200:16 <b>stories</b> 200:14 243:6 <b>storm</b> 207:23 208:3 229:10 <b>story</b> 201:1,5,7 <b>straight</b> 241:12,14 241:15 <b>street</b> 2:4,6,11,21 <b>strength</b> 206:2,4 222:3,7 <b>strict</b> 4:18 138:25 139:9,16 <b>strictly</b> 97:15 109:23 <b>strong</b> 43:25 187:10 188:20 <b>strongly</b> 244:24 <b>structure</b> 209:17 209:20 210:8	<b>struggles</b> 243:7,8 <b>struggling</b> 87:8 <b>student</b> 40:5 <b>students</b> 39:22 90:12,22 <b>studies</b> 80:6,22 82:22,23 85:19 109:22 110:11,15 110:20 111:7,25 115:17 116:8,10 127:11 148:22 159:1 161:12 172:25 178:18 181:6 191:22,23 192:1,1,4,6,7 195:12 197:9,16 216:18,18,21 231:16 232:2,9,16 232:23 233:13 234:24,25 241:3 242:2 <b>study</b> 5:5 17:17 18:6,11 19:3,15,22 28:19 36:15 37:10 110:3 118:14 119:4,19 120:4,7 121:15,17 127:8 127:13 147:20,23 148:9,12,15,16,18 148:23,25 149:10 149:14 150:3,4,5,6 150:7,11,22 151:10,19,20,21 151:22,23 152:1,1 152:23 153:15,16 153:17 154:18 155:1,15,21 156:8 157:19 158:6,7,20 159:7 160:3,4,6,7 161:8 162:5,6,7,8 162:10,13,15,22
---	---	--	---

163:6,14 164:2 165:14,15 180:15 180:24 192:12,16 192:16 196:20 199:17 228:22 230:7 235:19 237:11,13,20 242:9 <b>studying</b> 164:6 <b>sub</b> 21:14 41:2 <b>subcategory</b> 80:5 <b>subcommittee</b> 31:22 32:2,4 <b>subheading</b> 199:22 <b>subject</b> 34:5 72:12 82:10 124:6 168:14 228:15 229:22 <b>subjects</b> 118:6 199:10 <b>submit</b> 29:22 <b>submitted</b> 16:10 16:19 <b>submitting</b> 17:24 24:14 <b>subparagraph</b> 26:1 <b>subreddit</b> 200:12 200:19 <b>subscribe</b> 107:21 107:23,24 <b>subscribed</b> 253:14 <b>subsection</b> 96:19 <b>subsequent</b> 16:16 <b>subsequently</b> 21:9 <b>subsidizing</b> 41:14 <b>substance</b> 17:6,20 88:4 169:24 233:8 241:1,6 242:24 243:2,3	<b>substantial</b> 173:3 <b>substantive</b> 107:20 <b>subtle</b> 107:25 185:6 <b>success</b> 233:9,9 <b>successful</b> 71:4,8 <b>succinct</b> 12:5 <b>suddenly</b> 125:1 189:12 <b>suffer</b> 241:24 242:4,8 <b>suffering</b> 133:9 134:24 136:23 224:19 <b>sufficient</b> 93:4 <b>sufficiently</b> 94:11 133:16 134:8 137:18 226:2 <b>sugar</b> 222:18 <b>suggest</b> 186:3 200:2 <b>suggesting</b> 200:25 <b>suicidal</b> 160:8 233:8 <b>suicide</b> 147:7,15 148:2,5,11,13,16 148:18,23 149:10 149:23 152:2,11 159:2,15,25 161:9 163:18,20 238:5 241:4,5,6 <b>suicides</b> 162:16,22 <b>suing</b> 73:23 76:14 <b>suite</b> 2:7,11,16 <b>summarized</b> 150:11 <b>summarizing</b> 84:19 <b>summary</b> 84:20 96:24 231:12	<b>superficial</b> 109:3 <b>superior</b> 1:18 <b>supersede</b> 211:22 <b>supervise</b> 50:5 <b>supervised</b> 133:15 <b>supervision</b> 36:20 51:22 202:6 <b>supervisor</b> 59:4,10 59:15,16,21 <b>supervisory</b> 50:11 <b>support</b> 68:4,12 69:23 93:18 95:14 110:11,21,25 116:9 122:9,11 129:19 138:10 190:10 197:9 215:16 218:20 221:3 228:23 230:15 <b>supported</b> 22:17 22:17 205:10 <b>supporting</b> 109:14 222:5 <b>supports</b> 111:2 <b>supposed</b> 89:7 <b>suppress</b> 220:7 <b>suppression</b> 142:3 142:12,17 <b>sure</b> 9:2 13:16 17:12 24:5 27:22 53:16 58:15 69:5 75:25 86:13 105:12,18 107:1 119:3,15 128:18 141:6 146:23 149:14 150:10 154:12 169:3,4,11 170:24 175:12,12 175:23 181:13 201:12,17 203:4 215:21 224:11	235:25 <b>surface</b> 109:7,8 <b>surgeon</b> 68:8 94:19 95:9 <b>surgeons</b> 95:14 130:16 <b>surgeries</b> 55:9 56:5 60:2,6 70:21 70:22,23 <b>surgery</b> 5:4,9 11:18,21 18:7,14 55:16,23 58:7 59:13,16,21,22 60:1,4,8 67:21 68:3 70:25 71:1,7 72:3 73:20 76:10 83:4,20 90:22 95:20 96:4 112:17 138:14 147:9,17 148:1,10,19 150:25 151:5,6 152:3,4,12,14,19 153:1,11,23 154:4 154:18 155:1 156:10 159:15,25 160:10 161:10,11 161:19 162:2 164:7 165:18 180:2 193:5 199:3 225:1 230:3 239:12,13 241:18 <b>surgical</b> 67:11 81:8,17 85:10 92:18 111:3 118:8 <b>surgically</b> 163:9 <b>surprise</b> 101:6 <b>surprised</b> 44:3 <b>surreptitiously</b> 53:25 <b>survey</b> 117:11,17 117:21 122:2
--	---	---	---



223:8 <b>surveys</b> 197:7 199:4 <b>survive</b> 204:16 <b>suspect</b> 212:14 <b>suspicion</b> 212:16 <b>suspicious</b> 229:24 229:25 244:24 <b>swear</b> 6:25 <b>sweden</b> 5:5 138:8 145:21,24 147:24 148:4,12,23 149:2 149:10,21,22 150:7,12,15 154:18 155:1 156:20 157:2 <b>swedish</b> 144:21 145:13,16,17 146:3 148:14 149:13 150:17 155:16 161:8 162:13 <b>swirling</b> 136:6 <b>sworn</b> 7:4 249:10 253:14 <b>symposia</b> 28:1 <b>symptoms</b> 133:25 208:16 <b>synonym</b> 63:17 <b>synonymous</b> 21:2 <b>synthesis</b> 113:17 <b>system</b> 108:15 112:6 215:18,20 216:9 <b>systematic</b> 110:15 <b>systemic</b> 19:16 <b>systems</b> 112:5,12 132:23 135:8 216:4	<b>t</b> <b>t</b> 80:5,14,15,16 252:3,3 <b>tab</b> 63:6 <b>table</b> 9:25 39:23 39:24 <b>take</b> 10:2,4,19 15:8 40:11 89:24 89:25 93:11 102:23 123:13 132:24 146:21 157:5,14 162:25 178:25 190:1 191:14 217:1 218:6 221:7,8,10 227:1 229:5 243:7 244:2 <b>taken</b> 1:17 40:20 91:2 101:24 143:17 147:1 191:17 227:7 244:5 249:20 <b>takes</b> 221:17 240:7 <b>talk</b> 10:24 38:5 39:3 54:25 67:15 68:20 85:13 114:12 137:5 168:11 169:18 193:15 226:7 234:21 238:13 240:5 <b>talked</b> 23:14 114:20 115:23 188:9 192:23 243:5 <b>talking</b> 27:10 36:9 54:3 103:7 115:7 136:5 160:5 168:16 191:21 222:19	<b>talks</b> 28:6 <b>tara</b> 2:6 6:19 <b>task</b> 205:17 <b>taught</b> 135:13 <b>tays</b> 141:17 <b>tborelli</b> 2:8 <b>teach</b> 36:16 44:24 45:3 72:11 133:11 134:25 135:3,23 135:24 <b>teacher</b> 46:5 <b>teachers</b> 2:14 78:24 79:9 <b>teaching</b> 26:25 35:22 36:4,7,19,23 36:24 124:12 131:7 133:17 134:1,10 136:1,3 136:19 202:12 <b>team</b> 44:22 45:16 50:10 54:24 169:7 <b>tedious</b> 138:19,21 <b>teen</b> 51:3 173:25 174:3 <b>teenage</b> 47:17 <b>teenager</b> 47:12 49:24 112:11 115:14 135:19 238:22 <b>teenagers</b> 32:18 48:5 112:3 115:25 <b>teens</b> 4:16 26:16 122:24 123:6 124:18 <b>telephonic</b> 5:11 170:6,13 <b>tell</b> 49:9 52:2 56:16 60:1 61:2 65:14 68:7,7 79:5 97:7 100:18 106:2 114:15 131:11	188:21 222:16 226:23 228:25 243:5 246:3 <b>telling</b> 119:14 232:5 <b>template</b> 206:5 <b>ten</b> 31:24 49:3 52:8 54:25 60:25 72:18 167:9,11 171:13 188:25 <b>tenacious</b> 135:21 135:22 <b>tenure</b> 35:18 <b>tenured</b> 35:19 <b>term</b> 5:3,8 11:10 11:14 31:2 72:9 82:5 120:24 121:2 128:11,12,20,21 130:15 131:17 132:5,19 138:11 153:16 154:16,24 155:15 158:7 161:18 162:1 166:21 220:10 222:14 231:15 232:1,8,15,22 233:12 237:7 238:21 <b>terminology</b> 69:15 <b>terms</b> 52:8 111:12 233:6,7 <b>terrible</b> 190:16 204:6 240:2,14 <b>test</b> 113:8 174:16 174:23 <b>testified</b> 24:10 40:25 84:17 188:2 <b>testify</b> 7:18 23:18 156:7 249:11 <b>testifying</b> 160:13
--	--	--	--

## [testimonies - timeframe]

Page 47

<b>testimonies</b> 197:6 197:12 198:5 <b>testimony</b> 8:8 10:15 24:2 25:13 25:17 84:4 159:13 159:24 160:12 198:9 213:24 228:5 249:13,17 251:9,18 253:8 <b>testosterone</b> 53:24 <b>text</b> 75:24 120:1 <b>thank</b> 10:5 12:16 12:21 13:20 14:14 17:16 18:4,20 19:18 23:9,24 24:13 28:4 33:1 34:6 39:8 40:10 45:14 46:10 52:4 55:4 60:14 61:16 62:13,16,20 67:7 68:25 69:13 81:4 84:15 86:20 92:6 93:16 121:14 124:1 143:12 151:7 155:5 166:10,14 176:17 194:18 204:2 209:14 247:10 <b>thanks</b> 33:10 101:20 <b>theme</b> 29:17,19 <b>theoretically</b> 137:17 <b>theory</b> 113:15 122:12 <b>therapeutic</b> 112:1 153:25 <b>therapist</b> 59:3 <b>therapists</b> 49:4 59:4	<b>therapy</b> 21:17 58:9 138:11 143:9 165:17 173:4 <b>thesis</b> 157:10,11 157:17 <b>thing</b> 65:21 84:8 88:24 115:10 149:18 180:15 185:5 187:10 189:23 209:8 216:23 223:2 225:2 228:20 230:19 240:14 246:24 <b>things</b> 17:12 38:16 39:12 56:18 66:19 82:25 83:2,22 87:23 101:8 110:17 137:2 138:18 152:24 189:6,14 193:5 204:8 208:20 216:5,5 239:3,16 <b>think</b> 8:12 9:3 10:16,20 18:7 22:14 24:11 29:1 29:4,13 31:4,23 32:11 34:4,23 38:9 43:7,8 48:20 50:20 52:25 64:20 66:1,15,19,24 67:12 68:21 69:18 69:23 73:1 74:1 76:18 78:9,12 81:13 83:5,6 84:4 88:25 94:4 95:25 98:6 100:23 102:19 103:24 105:21,21 106:6,7 107:4,4 109:19 112:14 115:12,14	116:10 117:4 119:16 128:21 131:16 139:23 143:23 145:20 149:18 150:10 152:1,20,21 162:15,22 163:16 164:18 172:10 174:20 181:18 183:9,9 184:14,18 185:8,9 186:1,9 187:10 188:18,19 189:1 190:15,20 190:22 192:13 201:4,4 203:14 208:6,23 209:11 211:7 214:7 216:13,22 221:11 222:12,21,25 224:9 225:3 226:6 228:2,20,20 229:3 234:20 235:10 238:3 242:9 245:9 246:20,22 <b>thinking</b> 51:6 66:21 70:17 193:7 201:7 228:9 241:4 <b>thinks</b> 39:1 112:6 179:17 <b>third</b> 126:8 147:5 151:16 164:14 <b>thirteen</b> 192:14 <b>thirty</b> 56:14 58:17 60:24 147:24 148:1,10 192:2 241:4,5 <b>thomas</b> 207:4 <b>thorough</b> 103:6 142:23 <b>thought</b> 30:20 43:19 69:4 70:6	74:18 77:6 160:14 165:24 172:4 184:24 188:25 194:5 210:21,22 212:7 <b>thoughtful</b> 95:8 <b>thousands</b> 237:1,3 <b>three</b> 4:6 25:11 36:22 62:23 111:5 153:14 186:17 189:11 201:23 230:21 <b>threshold</b> 87:10 <b>tide</b> 4:17 122:24 123:6 <b>tides</b> 124:19 <b>tie</b> 239:9 <b>tilley</b> 76:9,17,23 181:24 190:17 <b>time</b> 6:3,6 15:8 16:9 30:18 35:9 35:20 39:19 41:21 46:9 52:8 55:14 62:5 64:14,16,20 65:2,6,8,17 68:13 76:3 86:11 89:25 93:10 94:2,8,15 116:1 120:15 123:13 128:12 132:4 135:19 153:18,21,24 156:1,3 157:5 162:24 165:23 166:8 168:16,17 169:17 172:15 178:21 179:9 191:10 243:23 249:20 251:19 <b>timeframe</b> 53:14 251:8
--	--	--	--



[times - treatment]

Page 48

<b>times</b> 7:12,21 36:22 148:5,14 149:9,24 161:10 162:10 173:1	<b>tracking</b> 148:2 <b>tracy</b> 1:20 9:9 249:6 250:14 <b>tragic</b> 134:24 <b>trained</b> 38:22 <b>trainee</b> 37:19 <b>trainees</b> 37:3 38:8 42:15 <b>training</b> 44:14 <b>traits</b> 125:6 <b>trans</b> 47:18 49:7 59:23 72:9,16,23 103:1 111:12,16 114:24,25 115:14 116:2 118:18 127:18 135:20 137:5,9 147:8,16 149:23 151:4,5 167:18,24 168:15 193:6 199:2 222:22 229:23 232:18 233:1,3,15 234:21 236:4 238:9 240:8,23 241:2,7,11,13 246:9,21,23,25 <b>transcribe</b> 9:10 <b>transcribed</b> 249:16 <b>transcript</b> 3:1 4:12 75:7 104:13 104:18 106:11 112:24 182:23 248:3,6,9,11,12 251:6,20 253:5,8 <b>transcription</b> 249:17 <b>transformation</b> 80:2 186:12 <b>transgender</b> 4:10 4:11,16 11:5	12:11 19:10 20:16 29:13 31:1 36:8 38:11 46:19 47:11 51:3 54:10 89:11 89:13,20 90:5,11 90:15 108:14,19 109:11,14 115:24 115:25 117:14 122:24 123:6 124:2,18 128:11 129:18,23 131:15 132:20 134:21 136:4 146:4 150:24 154:8 156:9 158:17 159:16 160:1 166:18 175:14,23 176:1 177:20,25 180:12 189:10 200:15 237:15 239:18 240:17 241:24 242:4,7,12 242:14,17 243:17 243:19 246:13 247:5 <b>transgenderism</b> 29:8,11 108:17 <b>transition</b> 158:9 167:12,17,22 168:8 169:14 171:16,19 172:8 173:4,13 174:7,10 174:21 178:4,12 178:21 179:1,8,9 180:19 183:6 231:19,23 <b>transitioned</b> 178:20 180:1 201:10 <b>transitioning</b> 122:1 171:23	172:11 200:16 <b>translated</b> 145:20 <b>transsexual</b> 5:3 114:19 129:20 154:16,25 155:14 155:22 163:7,9 <b>transsexualism</b> 19:25 <b>traumatic</b> 137:15 <b>treasurer</b> 1:8 79:1 <b>treat</b> 11:1,6 136:21,23 174:8 174:10 190:11 215:1,2,2 236:12 236:17 <b>treated</b> 46:18 124:2 159:3 167:5 211:17 238:19 242:24 244:19 <b>treating</b> 4:18 70:3 74:17 77:5 138:25 139:10,16 <b>treatment</b> 5:16,19 12:10,13,14,19 19:7,10 20:8,15 22:11 23:3 27:20 28:3,19 30:1,1 31:1 33:12 34:2,9 34:15,17 36:7 51:11,20 53:3,5,6 53:8,10,13,21 54:1 54:3,16,17 55:19 66:22,25 67:10,11 67:13 68:5 69:19 69:20 70:7,10 73:20 74:19,21 76:10 77:7,9 80:1 80:6,22 81:9,16,17 82:24 83:1,3 85:10,11 92:3 96:13 102:21
---	--	--	---

103:2 110:22 111:3 128:11 130:21 131:2,3,15 132:20 136:20 140:7,24 142:3,7 142:11,13,16,17 144:8,9 145:22 155:25 158:13,24 159:6 160:24 175:6,25 176:9 178:4 180:19,20 181:10 183:18 185:1 200:18 213:12,20 215:8 217:10,19,23 218:8 220:22 221:4 222:9 224:19 236:22 237:15 240:10 241:18 <b>treatments</b> 31:1 54:11 55:6 56:4 57:23 66:17,23 71:17,19,21 81:15 82:3,9,16 83:10 93:15 108:20 111:4,9 129:21 130:10,11 131:6 141:16 143:7 173:13,16 188:19 216:24 217:1 <b>trends</b> 237:14 <b>trial</b> 4:12 25:13 104:12,18 112:24 <b>trick</b> 165:20,21 <b>true</b> 60:22 71:10 82:25 83:3 96:8 109:3 176:4,5,6 201:4 237:3 238:25 249:16 253:8	<b>trust</b> 25:21 90:6 <b>trustees</b> 205:23 <b>trustworthy</b> 113:20 214:17 <b>truth</b> 249:11,11,12 <b>truthful</b> 10:15 <b>truthfully</b> 7:18 <b>try</b> 104:5 135:24 174:14 177:13 210:17 228:25 <b>trying</b> 32:16 95:2 96:6 130:15 132:8 135:23 137:10 179:19 183:22 228:12 240:11,12 <b>turban's</b> 13:13,13 <b>turco</b> 4:12 104:12 104:19 <b>turn</b> 4:17 15:22 18:24 57:17 73:10 79:14 80:4 90:8 92:11 96:17 104:21 107:12 122:25 123:7 126:6 133:3 137:25 141:4 146:18 155:6,7 157:21 171:2 190:1 199:16 211:6 218:13 219:10,11 223:11 227:14 230:23 <b>turned</b> 209:24 <b>turning</b> 74:5 98:15 98:15 112:22,25 113:2 165:13 171:14 190:5,14 205:15 <b>turns</b> 60:10 <b>twelve</b> 31:24 52:2 55:17 167:7,9,11	<b>twenty</b> 20:21 40:2 40:3 45:23 47:11 47:20 54:23 56:13 59:18 180:5,14,15 <b>twice</b> 50:23 240:22 <b>two</b> 8:12 13:10 20:20 27:17 31:12 33:8 38:2,2 39:21 39:25 42:11 45:5 45:11,19 49:22 52:14 53:1,1 59:24 62:5 63:5 88:22 95:13 96:8 98:17 103:24 129:1,5 160:9 162:16,22 172:4,5 179:4 186:16 189:11 200:2 207:15,24 219:5 228:4 231:22 244:21 <b>types</b> 232:24 <b>typewritten</b> 4:6 62:23 <b>typical</b> 245:11 <b>typically</b> 86:10 <b>typology</b> 5:12 196:10,17 200:1 203:6 <b>u</b> <b>u.s.</b> 19:12 <b>uh</b> 172:2 <b>ultimately</b> 169:14 169:16 172:8 <b>um</b> 140:10 151:12 151:17 166:5 177:16 199:23 <b>unanswered</b> 223:9 <b>uncertain</b> 71:9,10 153:12	<b>uncertainty</b> 111:8 111:15 <b>unchangeable</b> 101:1 <b>unclear</b> 30:18 113:10 <b>uncomfortable</b> 127:23 <b>unconfirmed</b> 113:15 <b>undefeated</b> 183:14 <b>undergo</b> 93:14 95:20 150:25 <b>undergoing</b> 5:4,9 154:17,25 161:19 162:1 195:17 <b>undergone</b> 156:10 <b>underneath</b> 109:8 <b>understand</b> 7:14 9:6 10:7 11:10,14 13:7 27:15 37:8 39:5 45:12 49:25 67:17 68:24 69:17 70:16 77:20 82:13 83:21 87:18,19 94:19 95:25 99:1 100:1 105:3 106:16 131:12 134:14 135:2 136:18 137:10 143:6 151:2 152:7 154:11 169:5,6,7 187:7 194:1 200:24 207:10 210:7 221:25 222:2 228:12,13 229:6 235:3 <b>understanding</b> 34:7,22 56:8 58:3 95:6 96:11 101:17 136:8 146:1
--	---	--	--

154:12 197:3 209:15 <b>understands</b> 93:21 <b>understood</b> 23:24 24:1 26:19 36:13 44:9 46:10 56:15 61:20 65:22 66:21 70:4 74:18 77:6 93:9,9 94:12 95:15 96:7 97:20 97:20 109:20 133:7 134:20 194:8 204:24 210:2 212:20 226:18 247:4 <b>underwent</b> 164:6 <b>underwrite</b> 82:15 <b>uneasy</b> 223:10 <b>uneducated</b> 180:7 <b>unfortunate</b> 238:9 <b>unfortunately</b> 106:10 <b>ungdomar</b> 4:23 145:5 <b>ungraded</b> 216:5 <b>united</b> 1:1 <b>universal</b> 60:20 <b>universe</b> 175:11 <b>university</b> 22:5,18 35:5,11 36:20 41:6,9,11,13,25 42:14,17,23 64:18 89:19 90:4,19 <b>unprecedented</b> 205:7 <b>unproven</b> 82:9 <b>unusual</b> 229:21 <b>upper</b> 104:24 141:8 199:18 <b>use</b> 11:10,14,17 31:2 32:21 39:6	51:8 61:19 68:13 68:23 79:17 87:1 87:3,5,6,17 97:11 97:22 102:14 116:5 120:24 128:10,15 132:19 135:6 152:22 159:7 175:5 186:11,12,13 187:23 202:2,10 236:11,16 242:10 <b>usually</b> 38:2 87:13 169:22 178:23 <b>utility</b> 206:9 <b>utredning</b> 4:22 145:3	<b>various</b> 19:3 28:12 36:6 108:20 130:4 130:17 209:2 232:24 <b>vary</b> 27:9 <b>vast</b> 124:24 126:11 178:20 190:16,16 190:21 <b>veracity</b> 91:17 <b>verbal</b> 10:20 123:24 <b>verbalized</b> 9:12 <b>verbatim</b> 125:10 <b>verify</b> 251:9 <b>veritext</b> 1:17 251:14,23 <b>veritext.com</b> 251:15 <b>versa</b> 125:12 <b>version</b> 29:25 103:12,13 104:3,7 105:4,8,11,20 106:17,21,24 107:3 109:24 <b>versions</b> 103:15 <b>versus</b> 6:4 8:14,18 24:3,15,21 37:24 39:17 57:14 104:19 170:12 209:5 <b>vice</b> 125:12 <b>vid</b> 4:22 145:3 <b>video</b> 1:13 <b>videographer</b> 2:25 6:1,24 40:19,21 69:9,11 91:1,3 101:23,25 146:25 147:2 191:16,18 227:6,8 244:4,6 247:12	<b>view</b> 54:15 183:4 189:16 208:15 209:11 226:4 231:14 <b>views</b> 12:17 118:8 160:22 187:15 189:17 <b>violations</b> 21:22 <b>violence</b> 241:9 <b>virtual</b> 116:2 234:8 <b>visit</b> 51:10 <b>vocal</b> 173:22 <b>vocational</b> 237:7 <b>vs</b> 1:6 <b>vulnerabilities</b> 234:11 <b>vulnerability</b> 72:18 158:16 233:22 <b>vulnerable</b> 72:17 72:17 111:16 121:5
	<b>v</b>		<b>w</b>
	<b>v</b> 4:12 104:12 223:7 251:4 252:1 253:1 <b>vague</b> 79:22 <b>vaguely</b> 78:5 <b>valid</b> 145:25 195:6 197:13 198:3,6 231:16 232:2,9,16 232:23 233:13 242:3 <b>validate</b> 120:18 <b>validated</b> 177:21 <b>validators</b> 206:6 <b>validity</b> 34:24 197:23 198:1,9 208:11 232:10 <b>valued</b> 174:25 <b>values</b> 240:4 <b>vandetta</b> 2:25 <b>variance</b> 141:1 <b>varies</b> 74:13 77:1 <b>varieties</b> 27:23 <b>variety</b> 197:5		<b>w</b> <b>w</b> 2:21 <b>wait</b> 9:18,20 227:15 238:16 <b>walk</b> 85:12,12 <b>wall</b> 2:4 <b>want</b> 7:10 10:23 23:18 67:15 68:6 68:21 69:5 70:10 71:13 72:5 74:21 74:24 75:21,22 77:9,13 88:13 95:12 112:14 132:15 137:5 141:6 154:8,9,12 157:13 159:19,22 160:21 162:9 166:6 174:19,24

[want - wrote]

Page 51

176:11 179:3 180:2,3 198:14 209:13 217:4 230:20 236:7 239:4,8,9 246:15 <b>wanted</b> 11:1 106:1 148:22 151:8 166:2,3 167:18 186:3 208:22 224:23 239:16 <b>wanting</b> 173:12 <b>wants</b> 68:11,14 179:1 209:3 221:6 <b>war</b> 230:9,11 <b>warned</b> 128:24 <b>warning</b> 185:2 <b>watch</b> 129:3 <b>water</b> 132:12 <b>way</b> 37:15 68:20 68:21 71:24 72:2 100:14 110:12 112:12 113:16 115:17 121:3 125:20 129:1,14 132:6 147:5 155:9 167:19,24 168:22 169:6 185:6 186:25 196:3 201:13,19,21,25 240:10 <b>ways</b> 107:24 194:2 <b>we've</b> 87:25 176:19 180:18 189:9 230:8 <b>wealthy</b> 66:12 <b>weaver</b> 2:10 6:21 6:21 <b>web</b> 90:4 <b>website</b> 32:12 63:5 89:19 200:22	<b>websites</b> 118:7 <b>week</b> 36:22 38:3 39:21 45:17,18,18 45:20 51:1 115:7 115:7 <b>weekly</b> 50:23 51:2 <b>weeks</b> 207:15,24 <b>welcome</b> 61:5 <b>welfare</b> 180:7 <b>went</b> 36:23 95:17 171:22 <b>west</b> 2:11 <b>western</b> 22:4 35:5 35:11 41:6 42:22 42:23 43:16 44:10 44:20 46:3 48:12 89:18 90:4,19 <b>whereof</b> 250:5 <b>white</b> 205:9 <b>wide</b> 196:1 <b>widely</b> 206:21 <b>willing</b> 95:16 217:25 218:5 <b>winded</b> 132:14 230:22 <b>wine</b> 27:12 <b>wise</b> 201:11 <b>wish</b> 75:1 77:15 83:17 168:11 216:17,20 <b>withdrawn</b> 117:7 <b>witness</b> 6:5,25 11:25 23:13,17 25:24 40:17 106:7 107:23 144:17 149:18,20 171:5 205:16 227:13 244:8,9,12 249:9 249:14,15,18 250:5 251:8,10,12 251:19	<b>witness's</b> 248:2 <b>witnessed</b> 195:15 <b>woman</b> 167:25 168:3 <b>women</b> 38:14 173:23 195:11 <b>wonder</b> 115:1 147:7,15 150:10 185:4,5 <b>wondered</b> 213:6 <b>wondering</b> 23:15 129:8 159:24 <b>word</b> 47:7 56:12 56:13,13 67:16 68:13,23 97:8,11 97:23 98:6,7 116:5 134:4 135:7 152:10 171:10 <b>worded</b> 143:24 144:1 <b>words</b> 21:23 26:22 27:17 103:20 129:25 136:2 204:23 <b>work</b> 9:3 13:2 30:19 37:5,22,24 39:10,12,16,17 40:16 41:14 42:14 46:11 50:4 62:2 63:22 70:18 129:18 197:10 205:17 212:9 <b>worked</b> 99:11 <b>working</b> 12:25 31:8 33:11 177:19 <b>works</b> 124:8 129:9 <b>workshop</b> 24:7,11 <b>world</b> 38:25 99:7 158:11 168:2 179:7 181:21 192:25 196:1	205:18 229:23 <b>worries</b> 8:23 <b>worrisome</b> 72:24 111:15 <b>worrisomeness</b> 73:4 <b>worry</b> 201:14 234:11 <b>worrying</b> 238:21 <b>worse</b> 68:1 158:25 235:17 <b>worth</b> 25:13 71:10 <b>wow</b> 240:13 <b>wpath</b> 13:25 14:3 29:24 102:3,10 105:23 107:6,22 109:24 110:25 112:18 129:19 130:2 131:3 216:15,17 <b>wpath's</b> 14:2 <b>write</b> 46:24 55:5,8 63:11 68:4,12 69:22 87:10 124:11 212:22 226:13,16 <b>writing</b> 9:4 15:12 103:19,25 104:2 108:22 221:3 <b>written</b> 13:3 29:2 49:14 56:3,3,17 95:14 122:10 192:7 204:13 <b>wrong</b> 17:22 29:2 44:8 <b>wrote</b> 15:7 16:9 26:21 55:14,22 103:14,20,24 129:17 195:5 228:25
---	--	---	---

[wyoming - zooming]

Page 52

<b>wyoming</b> 2:17	33:7,8 37:24 38:6	<b>zoomed</b> 57:11
<b>y</b>	40:2,4 43:1 45:24	<b>zooming</b> 54:14
<b>y</b> 104:19	46:17 47:11,13,14	
<b>yeah</b> 14:10 16:8	47:20 48:3 49:23	
18:12,19 22:6	51:21 52:8,13,14	
25:11 35:16 58:12	53:1,17 54:23,25	
105:1 122:21	56:17 58:10,11	
123:4,17 125:19	59:9,13 60:25,25	
126:2,18 128:17	65:25 67:18,19	
128:17 135:12	83:21,22 111:6,9	
140:1 145:24	115:3 130:2	
157:12,16 163:4	138:12 143:1,15	
163:20 164:13,25	153:14 160:10	
172:13 175:20	164:5 167:6 168:5	
181:16,18,25	172:1 174:1,3	
182:5 183:25	179:9,13 180:5,14	
203:5 205:4,4	186:17,17,23	
219:22 227:17	188:25,25 189:11	
228:2	189:11 192:2	
<b>year</b> 16:20 20:17	197:17 204:16	
27:8,8,9,9 35:18	233:25 242:18	
46:2 47:8,9 49:18	244:22	
50:20 51:6,16,17	<b>yesterday</b> 32:1	
51:25 52:1,12,15	<b>york</b> 2:4,4	
52:23 54:15 59:1	<b>young</b> 4:14 33:21	
59:19 65:10 79:10	33:24 38:4 112:7	
114:15 136:9	115:3,3 116:16,25	
147:24 148:1,4,10	117:23 118:9	
149:23 160:11	120:17 131:7	
164:10 167:5,7,12	143:5 144:23	
171:15,18,25	164:4 173:23	
174:16 178:8,25	228:17	
180:15 183:16	<b>younger</b> 40:3	
184:8,8 186:16	47:22,22	
188:2 191:21	<b>youth</b> 121:1,4	
192:14 221:12	124:25 126:11	
238:13,14,14	183:18	
239:1	<b>z</b>	
<b>years</b> 12:25 20:21	<b>zero</b> 51:18 52:11	
25:11 26:5,7,13,15	<b>zoom</b> 4:4 56:21	
27:11 29:16,20	57:2	

North Carolina General Statutes  
Article V. Depositions and Discovery  
Rule 30

(e) Submission to deponent; changes; signing.

The sound-and-visual recording, or the transcript of it, if any, the transcript of the sound recording, or the transcript of a deposition taken by stenographic means, shall be submitted to the deponent for examination and shall be reviewed by the deponent, unless such examination and review are waived by the deponent and by the parties. If there are changes in form or substance, the deponent shall sign a statement reciting such changes and the reasons given by the deponent for making them. The person administering the oath shall indicate in the certificate prescribed by subdivision (f)(1) whether any review was requested and, if so, shall append any changes made by the deponent. The certificate shall then be signed by the deponent, unless the parties by stipulation waive the signing or the deponent is ill or cannot be found or refuses to sign. If the certificate is not signed by the deponent within 30 days of its submission to him, the person before whom the

deposition was taken shall sign the certificate and state on the certificate the fact of the waiver or of the illness or absence of the deponent or the fact of the refusal or failure to sign together with the reason, if any, given therefor; and the deposition may then be used as fully as though the certificate were signed unless on a motion to suppress under Rule 32(d)(4) the court holds that the reasons given for the refusal to sign require rejection of the deposition in whole or in part.

DISCLAIMER: THE FOREGOING CIVIL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE STATE RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.



VERITEXT LEGAL SOLUTIONS  
COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted fashion to authenticated parties who are permitted to access the material. Our data is hosted in a Tier 4 SSAE 16 certified facility.

Veritext Legal Solutions complies with all federal and State regulations with respect to the provision of court reporting services, and maintains its neutrality and independence regardless of relationship or the financial outcome of any litigation. Veritext requires adherence to the foregoing professional and ethical standards from all of its subcontractors in their independent contractor agreements.

Inquiries about Veritext Legal Solutions' confidentiality and security policies and practices should be directed to Veritext's Client Services Associates indicated on the cover of this document or at [www.veritext.com](http://www.veritext.com).





(//case.edu/)

## Lesbian Gay Bisexual Transgender Center (<https://case.edu/lgbt/>)

HOME (/LGBT/) » RESOURCES (/LGBT/RESOURCES) » TRANSGENDER RESOURCES

**Exhibit**  
**SL 06**

### Transgender Resources

#### PROMOTE YOUR ORGANIZATION

To have your organization included in the LGBT Center's resources directory submit a paragraph describing the organization and services or resources it provides. LGBT Center staff will review submissions for relevance.  
For information or submission, contact [lgbt@case.edu](mailto:lgbt@case.edu). (<http://lgbt@case.edu/>)

### On-Campus Resources

The following **conversation groups** (<https://case.edu/lgbt/signature-programs/conversation-groups>) for social support are facilitated at the CWRU LGBT Center: Gender Resistance, Coming Out, Found Families, LGBT D&D

### Updating Systems Information

- **Preferred Name, Gender Identity, and Personal Pronouns Update** (<https://case.edu/lgbt/resources/pronoun-resources>)
- **Legal Name Update** (<https://case.edu/registrar/forms-services/forms/namechange/>)
- **Changing Default Email Address** (<https://its-services.case.edu/pFDL/>)
- **Adding Alternate Email Aliases** (<https://its-services.case.edu/mailalias/>)
- **Changing Case ID Card** - Please email the LGBT Center Staff at [lgbt@case.edu](mailto:lgbt@case.edu) (<mailto:lgbt@case.edu>) to then work with Access Services
- **Update Gender Marker Policy & Form** (<https://case.edu/registrar/forms-services/forms/gender-change-policy/gender-change-form>)




### Bathroom Inventory

Please see a list of bathrooms around CWRU's campus that are single-stall, locking bathrooms.  
(</lgbt/resources/transgender-resources/bathroom-inventory>)

### Gender-Inclusive Housing

Learn more about **Gender Inclusive Housing** (</lgbt/resources/campus/campus-policy/gender-inclusive-housing>) options at CWRU.

### Name Change Resources

- **TransOhio Legal Clinics for Name & Gender Marker Changes** ([http://www.transohio.org/?page\\_id=2881](http://www.transohio.org/?page_id=2881))
- **Name Change Guide for Ohio Residents** 
- **Getting a Court Order for a Name Change** 
- **Cuyahoga County Name Change Application** 

- ID Documents Center, National Center for Transgender Equality (<https://transequality.org/documents>)

## Health Resources

### Trans Lifeline

A crisis line for transgender people currently in need of support and assistance.

**Trans Lifeline** (<http://www.translifeline.org/>) - 877.565.8860

This helpline is staffed by transgender people for transgender people, and is supported by donors.

Name change funding is available through microgrants on a monthly basis, visit [translifeline.org/microgrants](https://www.translifeline.org/microgrants) (<https://www.translifeline.org/microgrants>).

### Transgender Health Care Benefits for Students (<https://students.case.edu/wellness/medicalplan/1617/dependent.html>)

Gender affirmation care is covered by Aetna for students. Please contact the LGBT Center with questions or concerns about navigating insurance policies.

- Aetna Student Health Benefits Summary
- **Medical Coverage** (<https://students.case.edu/medicalplan/student/1415/medical.html>)
- **Aetna Gender Affirmation Care Information** (<https://www.aetna.com/search-results.html?query=transgender>)
- Call 1.877.850.6038 for Aetna Student Health Pre-approval

### Transgender Health Benefits for Employees (<https://case.edu/finadmin/humres/benefits/benelect.medical.html>)

Gender affirmation care is covered by MMO SuperMed, Anthem, and CLE-Care HMO insurances. Please find coverage information in the Certificate of Coverage for MMOSuperMed. For detailed coverage information for Anthem and CLE-Care HMO, contact the provider directly. Please contact the LGBT Center with questions or concerns about navigating insurance policies.

Anthem (HD & PPO) - 1.800.552.9159

- Medical Mutual SuperMed - 1.800.822.1152
- CLE-Care HMO - 1.877.330.6664

### LGBT Pride Clinic at the Thomas F. McCafferty Health Center

MetroHealth's Pride Clinic at the McCafferty Health Center is the first clinic in the region and one of only 12 health centers in the country devoted to serving the health needs of the lesbian, gay, bisexual, and transgender community.

### Center for LGBT Care (<http://my.clevelandclinic.org/about-cleveland-clinic/lesbian-gay-bisexual-transgender-health>)

Cleveland Clinic's Center for Lesbian, Gay, Bisexual and Transgender (LGBT) Care opened at the Chagrin Falls Family Health Center and **Lakewood Family Health Center** ([http://my.clevelandclinic.org/locations\\_directions/Regional-Locations/lakewood-fhc](http://my.clevelandclinic.org/locations_directions/Regional-Locations/lakewood-fhc)). Embedded in a primary care practice, the center provides care for all patients in a safe and welcoming environment. It includes providers who understand the health needs of LGBT patients, and access to specialists with expertise in LGBT care.

**James Hekman, MD** ([http://my.clevelandclinic.org/staff\\_directory/staff\\_display?DoctorID=9314](http://my.clevelandclinic.org/staff_directory/staff_display?DoctorID=9314)) specializes in LGBT health and co-chairs Cleveland Clinic's Gay and Lesbian Employee Resource Group. Dr. Hekman helped design the center and has moved his internal medicine practice to Lakewood.

### Equitas Health Akron (<http://equitashealth.com/service-category/medical/>)

- Equitas Health Institute for LGBTQ Equality (<http://equitashealthinstitute.com/>)
- Equitas Health 2018 Health Provider Guide (<http://equitashealthinstitute.com/publications/ohio-provider-resource-guide/>)

## **A Guide To Transgender Friendly Clinics by Region (<https://www.forhims.com/blog/a-guide-to-transgender-friendly-clinics-by-region>)**

To make things a bit easier, Hims researched and compiled their own guide to trans-friendly clinics across the United States by region.

## **AIDS Taskforce of Greater Cleveland (<http://www.aidstaskforce.org/>)**

The AIDS Taskforce of Greater Cleveland provides a compassionate and collaborative response to the needs of people infected, affected by, and at risk of HIV/AIDS. This is accomplished through leadership in prevention, education, supportive services, and advocacy. 3210 Euclid Ave., Cleveland, Ohio, 44115. Call 216.621.0766.

## **The Cleveland Rape Crisis Center (<http://www.clevelandrapecrisis.org/>)**

Learn more about the work of the **CRCC** ([w](#)). The CRCC's 24-Hour Hotline number is 216.619.6192.

## **Circle Health (formerly the Free Clinic)**

The Cleveland Free Clinic is a free-standing outpatient medical, dental, and mental health center dedicated to the belief that healthcare is a right and not a privilege. 12201 Euclid Ave., Cleveland, Ohio, 44106; 216.721.4010.

## **Health Insurance**

### **Student Policy**

### **(<https://students.case.edu/medicalplan/student/1516/medical.html>)**

Gender affirmation care is provided by Aetna. Transgender Benefits, In-Network: 80% of eligible charges are paid for by The Plan, the remaining 20% of charges are the responsibility of the student. There is no cost limit to surgeries per Plan year. Hormone Therapy is covered under the prescription benefit.

### **Employee Policy**

### **(<https://case.edu/finadmin/humres/benefits/benelect.medical.html>)**

Gender affirmation care is provided by MMO Supermed, Anthem, and CLE-Care HMO for employees. Please contact your provider for detailed coverage information.

- Anthem (HD & PPO) – **1.800.552.9159 (tel:(800)%20552-9159)**
- Medical Mutual SuperMed – **1.800.822.1152 (tel:(800)%20822-1152)**
- CLE-Care HMO – **1.877.330.6664 (tel:(877)%20330-6664)**

## **Local Resources**

### **LGBT Community Center of Greater Cleveland**

### **(<http://lgbtcleveland.org/index.html>)**

- **Public Transit Directions**  
(<https://www.google.com/maps/dir/Case+Western+Reserve+University,+10900+Euclid+Ave,+Cleveland,+OH+44106/LGI81.6083838!2d41.5043413!1m5!1m1!1s0x8830f04a6c45ddb:0x41f82406783830b1!2m2!1d-81.7309762!2d41.4840473!2m3!4e3!5e0!5e1!3e3>) or **Alternate Public Transit Directions**  
(<https://www.google.com/maps/dir/Case+Western+Reserve+University,+10900+Euclid+Ave,+Cleveland,+OH+44106/LGI81.6083838!2d41.5043413!1m5!1m1!1s0x8830f04a6c45ddb:0x41f82406783830b1!2m2!1d-81.7309762!2d41.4840473!2m2!5e0!5e1!3e3>)

## **TransFamily of Cleveland (<http://www.transfamily.org/>)**

TransFamily of Cleveland was founded to provide support and education for transgender persons, their families, friends, and significant others. We are associated with PFLAG to promote awareness of transgender persons and their issues. The TransFamily support group meets the **Second Saturday of every month 11AM-1:30PM** at the LGBT Community Center of Greater Cleveland.

## **Beyond Binaries Discussion Group (<http://lgbtcleveland.org/transgender-programs.html>)**

The Beyond Binaries discussion group meets **every 1st and 3rd Saturday, 10:30AM-12PM** at the LGBT Community Center of Greater Cleveland. This group is led by community members and is open to anyone 18+ (including, but not limited to genderqueer, queer, gender non-conforming, non-binary, bigender, agender, transgender, etc.). For more information, contact the LGBT Center at 216.651.5428 or the group facilitators at [www.facebook.com/beyond.binaries.cle](http://www.facebook.com/beyond.binaries.cle) (<https://www.facebook.com/beyond.binaries.cle/>).

## **Youth & Young Adult Programming (<http://www.lgbtcleveland.org/youth--young-adult-programs.html>)**

Weekly youth programming (14-24 years old)


## **MetroHealth Pride Clinic**


"The MetroHealth Pride Clinic is the first in the region devoted to serving the health needs of the lesbian, gay, bisexual, and transgender (LGBT) community. With specially trained physicians and support staff and an open and honest environment, we provide care that respects your unique health needs."

Note: MetroHealth will ask for a legal name before they will enter a preferred name to make an appointment. Appointments are often only available months in advance

- **Public Transit Directions**  
(<https://www.google.com/maps/dir/Case+Western+Reserve+University,+Euclid+Avenue,+Cleveland/4242+Lorain+Ave,+81.6083838!2d41.5043413!1m5!1m1!1s0x8830f03f00f8df1b:0x1d8f143550b638a7!2m2!1d-81.7159742!2d41.4797534!2m1!4e3!3e3>)

## **Online Resources**

- **Trans Justice Funding Project (<https://www.transjusticefundingproject.org/>)**
  - A community-led funding initiative to support trans justice groups run by and for trans people
- **Trans 101 from Sylvia Rivera Law Project (<http://srlp.org/resources/trans-101/>)**
  - A basic primer about transgender people and identities
- **Transgender Rights Toolkit for College Students** 
  - A legal guide for trans people and their advocates
- **Trans Student Educational Resources (TSER) (<http://transstudent.org/sites>)**
  - Links to educational, medical, legal, and informational resources and services.
- **Trans-Health (<http://www.trans-health.com/>)**
  - Information about trans health, including transition-related care as well as general healthcare.
- **Trans Women of Color Collective (<http://www.twocc.us/>)**
  - "Trans Women of Color Collective (TWOCC) is a national organizing collective led by trans women of color created to uplift the narratives, leadership, and lived experience of trans folks of color. Historically, we have been the catalyst of change for social justice movements. TWOCC works to empower our community and allies to create and sustain revolutionary change!"
- **Sylvia Rivera Law Project (<http://srlp.org/>)**

- "The Sylvia Rivera Law Project works to guarantee that all people are free to self-determine gender identity and expression, regardless of income or race, and without facing harassment, discrimination or violence."
- **Transgender Law and Policy Institute** (<http://www.transgenderlaw.org/>)
- **National Gay and Lesbian Task Force - Transgender Issues** (<http://www.thetaskforce.org/issues/transgender>)
- **International Foundation for Gender Education** (<http://www.ifge.org/>)
- **National Center for Transgender Equality** (<http://www.nctequality.org/>)
- **TG Forum** (<http://www.tgforum.com/>)
- **The Kinsey Institute for Research in Sex, Gender, and Reproduction** (<http://www.kinseyinstitute.org/>)
- **TransgenderZone** (<http://www.transgenderzone.com/>)
- **National Coalition for LGBT Health** (<https://healthlgbt.org/>)
- **Healthy Bodies, Safer Sex** 
  - A comprehensive guide to safer sex, relationships, and reproductive health for trans or non-binary people and their partners.



**CASE WESTERN RESERVE**  
**UNIVERSITY** EST. 1826  
think beyond the possible™

© 2021 Case Western Reserve University (<http://case.edu/>)

10900 Euclid Ave. Cleveland, Ohio 44106

**216.368.2000 (tel:12163682000)**

**Legal Notice** (<https://case.edu/utech/departments/information-security/policies/legal-privacy-notice>) | **Privacy Policy** (<https://case.edu/privacy-statement/index.html>)

**LESBIAN GAY BISEXUAL  
TRANSGENDER CENTER**

**Campus Location:**  
Tinkham Veale University Center,  
Suite 179  
11038 Bellflower Road  
Cleveland, OH 44106

**Mailing Address:**  
10900 Euclid Ave.  
Cleveland, OH 44106-7141

**Phone: 216.368.LGBT  
(tel:216.368.LGBT)**

**Site Feedback**  
(mailto:LGBT@case.edu)

**SOCIAL  
MEDIA**

**f**  
(<https://www.facebook.com/LGBTCent>)  
**Give Now** (<https://case.edu/give/>)  
**🐦**  
([https://twitter.com/CWRU\\_LGBTCent](https://twitter.com/CWRU_LGBTCent))  
**📷**  
([https://www.instagram.com/LGBT\\_CV](https://www.instagram.com/LGBT_CV))  
**Visit Campus** (<https://case.edu/visit/>)  
**University Directory**  
(<https://webapps.case.edu/directory/>)

**CWRU LINKS**

**Apply to CWRU**

(<https://case.edu/admissions/>)  
**Give Now** (<https://case.edu/give/>)

## Scientific Statement

# Considering Sex as a Biological Variable in Basic and Clinical Studies: An Endocrine Society Scientific Statement

Aditi Bhargava,<sup>1,2</sup> Arthur P. Arnold,<sup>3</sup> Debra A. Bangasser,<sup>4</sup> Kate M. Denton,<sup>5</sup> Arpana Gupta,<sup>6</sup> Lucinda M. Hilliard Krause,<sup>5</sup> Emeran A. Mayer,<sup>6</sup> Margaret McCarthy,<sup>7</sup> Walter L. Miller,<sup>1,8</sup> Armin Raznahan,<sup>9</sup> and Ragini Verma<sup>10</sup>

<sup>1</sup>Center for Reproductive Sciences and <sup>2</sup>Department of Obstetrics and Gynecology, University of California, San Francisco, CA 94143, USA; <sup>3</sup>Department of Integrative Biology & Physiology, University of California, Los Angeles, Los Angeles, CA 90095, USA; <sup>4</sup>Department of Psychology and Neuroscience Program, Temple University, Philadelphia, PA 19122, USA; <sup>5</sup>Cardiovascular Disease Program, Monash Biomedicine Discovery Institute and Department of Physiology, Monash University, Clayton, Victoria, 3800, Australia; <sup>6</sup>G. Oppenheimer Center for Neurobiology of Stress and Resilience, Division of Digestive Diseases, University of California, Los Angeles, Los Angeles, CA 90095-7378, USA; <sup>7</sup>Department of Pharmacology and Program in Neuroscience, University of Maryland School of Medicine, Baltimore, MD 21201, USA; <sup>8</sup>Department of Pediatrics, University of California, San Francisco, CA 94143, USA; <sup>9</sup>Section on Developmental Neurogenetics, Human Genetics Branch, National Institutes of Mental Health, Intramural Research Program, Bethesda, MD 20892, USA; and <sup>10</sup>Diffusion and Connectomics In Precision Healthcare Research (DiCIPHR) lab, Department of Radiology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA 19104, USA

**ORCID number:** 0000-0003-1334-0517 (A. Bhargava).

**Abbreviations:** ACTH, adrenocorticotrophic hormone; AT<sub>2</sub>R, angiotensin type 2 receptor; BMI, body mass index; cAMP, cyclic adenosine monophosphate; CKD, chronic kidney disease; CRF, corticotropin-releasing factor; CVD, cardiovascular disease; dMRI, diffusion magnetic resonance imaging; fMRI, functional magnetic resonance imaging; FCG, Four Core Genotypes (model); GMV, gray matter volume; GPCR, G-protein coupled receptor; HPA, hypothalamic-pituitary-adrenal; KYN, kynurenine; LC, locus coeruleus; MIH, Müllerian inhibitory hormone; PAR, pseudoautosomal region; PKA, protein kinase A; PTSD, posttraumatic stress disorder; RAAS, renin-angiotensin-aldosterone system; rs-fMRI, resting state functional magnetic resonance imaging; sMRI, structural magnetic resonance imaging; UCN, urocortin.

Received: 22 December 2020; First Published Online: 11 March 2021; Corrected and Typeset: 11 March 2021.

## Abstract

In May 2014, the National Institutes of Health (NIH) stated its intent to “require applicants to consider sex as a biological variable (SABV) in the design and analysis of NIH-funded research involving animals and cells.” Since then, proposed research plans that include animals routinely state that both sexes/genders will be used; however, in many instances, researchers and reviewers are at a loss about the issue of sex differences. Moreover, the terms *sex* and *gender* are used interchangeably by many researchers,



further complicating the issue. In addition, the sex or gender of the researcher might influence study outcomes, especially those concerning behavioral studies, in both animals and humans. The act of observation may change the outcome (the “observer effect”) and any experimental manipulation, no matter how well-controlled, is subject to it. This is nowhere more applicable than in physiology and behavior. The sex of established cultured cell lines is another issue, in addition to aneuploidy; chromosomal numbers can change as cells are passaged. Additionally, culture medium contains steroids, growth hormone, and insulin that might influence expression of various genes. These issues often are not taken into account, determined, or even considered. Issues pertaining to the “sex” of cultured cells are beyond the scope of this Statement. However, we will discuss the factors that influence sex and gender in both basic research (that using animal models) and clinical research (that involving human subjects), as well as in some areas of science where sex differences are routinely studied. Sex differences in baseline physiology and associated mechanisms form the foundation for understanding sex differences in diseases pathology, treatments, and outcomes. The purpose of this Statement is to highlight lessons learned, caveats, and what to consider when evaluating data pertaining to sex differences, using 3 areas of research as examples; it is not intended to serve as a guideline for research design.

**Key Words:** brain-gut, cardiovascular disease, chromosome complement, gender, sex differences, steroid hormones

Sex is an important biological variable that must be considered in the design and analysis of human and animal research. The terms *sex* and *gender* should not be used interchangeably. Sex is dichotomous, with sex determination in the fertilized zygote stemming from unequal expression of sex chromosomal genes. By contrast, gender includes perception of the individual as male, female, or other, both by the individual and by society; both humans and animals have sex, but only humans have gender. Both sexes produce estrogens, androgens, and progestins; there are no male- or female-specific sex hormones, *per se*, although these steroids are present in substantially different levels in males and females. Sex differences are caused by 3 major factors—sex hormones, genes, and environment. To understand disease mechanisms and exploit sex differences in protection or exacerbation of diseases, one needs to determine the relative contribution of factors, including observer effect (1), causing sex differences. Here—using 3 broad research areas as examples—the roles of sex differences in brain anatomy, brain-gut axis, and cardiovascular disease are discussed. Contemporary brain imaging methods show age- and sex-related differences in brain size, global and regional gray matter volume, white matter connectivity, and neuroanatomic regulation of appetite and satiety; while these differences are seen in large population-based studies, there is tremendous individual overlap, but such group-level findings do not inform findings, physiology, or pathology at the individual level. Sex differences in disorders of the brain-gut axis, obesity, type 2 diabetes,

and metabolic syndrome are caused by differential actions of brain-gut peptide and steroid hormones. The activation, signaling, and pharmacotherapy responses of the components of the hypothalamic-pituitary-adrenal (HPA) axis differ between the sexes. Heart and kidney functions are linked. Age, hormones, and sex biases seen in cardiovascular and chronic kidney diseases also differentially influence pharmacologic responses in men and women. Thus, sex differences pervade biology and medicine, and while not discussed in this Statement, must be considered in virtually all areas of biomedical research.

## Section I

### Sex Versus Gender

Much of the American public is surprisingly prudish about the word *sex*; it has now become commonplace to use the seemingly more genteel term *gender* when one really means *sex*. In *Moritz v Commissioner of Internal Revenue* (469 F. 2d 466 [1972]), Ruth Bader Ginsburg (subsequently, The Honorable Ruth Bader Ginsburg) argued against discrimination “on the basis of sex” not “on the basis of gender,” thus clearly, knowledgeably, and presciently understanding that “sex” does not equal “gender.” In a decision 48 years later (*Bostock v Clayton County*, 590 US, decided June 15, 2020), the United States Supreme Court separately ruled against discrimination on the basis of gender. *Gender* is often misused as a synonym for *sex*—for example, when filling out forms for various activities, we are routinely

asked to check a box labeled “gender,” but the only available options are boxes labeled “M” and “F.” But *sex* is not the same thing as *gender* and using these terms as equivalents obfuscates differences that are real and important in society in general and biomedical research in particular.

### Biological Sex: The Definition of Male and Female

*Sex* is a biological concept. Asexual reproduction (cloning) is routine in microorganisms and some plants, but most vertebrates and all mammals have 2 distinct sexes. Even single-cell organisms have “mating types” to facilitate sexual reproduction. Only cells belonging to different mating types can fuse together to reproduce sexually (2, 3). Sexual reproduction allows for exchange of genetic information and promotes genetic diversity. The classical biological definition of the 2 sexes is that females have ovaries and make larger female gametes (eggs), whereas males have testes and make smaller male gametes (sperm); the 2 gametes fertilize to form the zygote, which has the potential to become a new individual. The advantage of this simple definition is first that it can be applied universally to any species of sexually reproducing organism. Second, it is a bedrock concept of evolution, because selection of traits may differ in the 2 sexes. Thirdly, the definition can be extended to the ovaries and testes, and in this way the categories—female and male—can be applied also to individuals who have gonads but do not make gametes.

In mammals, numerous sexual traits (gonads, genitalia, etc) that typically differ in males and females are tightly linked to each other because one characteristic leads to sex differences in other traits. The type of gonads is controlled by the presence of XX or XY chromosomes, and gonadal secretions in turn regulate formation of female or male reproductive tissues, and characteristics that differ in typical males or females. These characteristics include external genitalia, uterus and oviducts, sperm ducts, and secondary sexual characteristics such as facial hair and pitch of voice. However, many people cannot make either eggs or sperm, yet are recognized as female or male based on other physical characteristics; people who do not have either ovaries or testes are rare. For individuals that possess a combination of male- and female-typical characteristics, these clusters of traits are sufficient to classify most individuals as either biologically male or female. For example, a person with testes and a penis, who cannot make sperm, is usually classified as a biological male, as long as the person does not possess female features such as a vagina, ovaries, or uterus. Based on evidence presented, to define male and female individuals in general society, we expand the defining characteristics of sex to include nongonadal traits, as well as classical gonadal traits.

A simple biological definition of male and female, satisfactory to all people, is elusive. In human societies, the terms *female* and *male* can have several meanings, as they refer both to a person’s biological sex and to their social roles. Most people learn to discriminate males and females from an early age, but often not based on biological traits (4). For example, behaviors such as pair-bonding, sexual activity, offspring defense and care, and mate/partner selection (5) involve complex interplay between sex steroid hormones and peptide hormones (oxytocin and arginine vasopressin); these behaviors are encouraged differently in women and men, which influences their role in the society and culture in which they live to behave as “females” or “males.” While these factors have little impact on their biological sex, they can have profoundly different outcomes in the behavior and health of an individual. Biological sex is dichotomous because of the different roles of each sex in reproduction. For scientific research, it is important to define biological sex and distinguish it from other meanings.

### Sex Chromosomes and Biological Sex Determination

Among mammals and many other taxa, males are characterized as the heterogametic sex (6), having 2 different sex chromosomes, X and Y, whereas females are homogametic (XX). By contrast birds, many reptiles, and some other organisms have Z and W chromosomes (7). In these organisms, the female is the heterogametic sex (ZW) and males are homogametic (ZZ). Some adult fish and reptiles can also change sex in response to environmental factors (8, 9), and even the adult mouse gonad can undergo partial sex reversal when specific genes are deleted (10, 11). Human biological sex is often assessed by examining the individual’s complement of sex chromosomes as determined by karyotypic analysis: males are XY and females are XX. Karyotypic sex is actually a surrogate for genetic sex, determined by the presence of the *SRY* gene on the Y chromosome (12, 13). However, karyotypic analysis may be misleading, as there are well-described 46,XX males (with testes). Most of these individuals carry a short segment of the Y chromosome that includes *SRY* transferred to an X chromosome, but up to 10% lack an *SRY* gene (14, 15). Similarly, there are 46,XY females, who have *SRY* but also have a duplication of *DAX1* (dosage-sensitive sex reversal, adrenal hypoplasia critical region, on chromosome X, gene 1) (16).

### Sex Determination and Sex Differentiation

In mammals, sex determination begins with the inheritance of XX or XY chromosomes, which are the only factors that are different in XX and XY zygotes. Thus, all phenotypic sex differences, including gonadal development, stem originally from the unequal effects of XX and XY



sex chromosomes. Phenotypic sex differences develop in XX and XY embryos as soon as transcription begins. The categories of X and Y genes that are unequally represented or expressed in male and female mammalian zygotes, which could cause phenotypic sex differences, fall into 3 main categories (17).

1. *Y genes causing male-specific effects.* These Y-linked genes do not have homologous genes on the X chromosome. The most important Y-linked gene is *SRY*, the testis-determining gene, which encodes the *SRY* transcription factor expressed during embryonic life in the bipotential gonadal ridge; *SRY* activates downstream autosomal genes such as *SOX9* to cause formation of a testis (18). In the absence of *SRY*, autosomal and X chromosome genes (*WNT-4*, *DAX-1*, *FOXL2*, *COUP-TFII*, and *RSPO1*) are activated to cause formation of an ovary (19–22). Both testicular and ovarian development are subject to active genetic regulation (12, 13, 16). Pathways downstream of *SRY* inhibit ovary-determining pathways, and ovary-determining pathways also inhibit pathways for testis development. Once the testes form, they secrete sex hormones that act widely throughout the body to cause male differentiation of nongonadal tissues. Other Y genes also have male-specific effects (for example, those required for spermatogenesis) (23, 24).
2. *X gene dosage or parental imprint.* Because XX nongermline cells inactivate one X chromosome (25, 26), it was long thought that both XX and XY cells have only one active X chromosome, with little inherent difference in expression related to the number of X chromosomes. The inactivated regions of the X chromosome are “coated” with large noncoding RNA transcribed from the X-inactive specific transcript (*XIST*) gene, part of the XIC (X inactivation center) located on Xq13 (27, 28). But some genes escape X inactivation (termed as *X escapees*), and therefore are expressed more in XX than XY cells, resulting in imbalance or incomplete dosage compensation (29). About 23% of human X-linked genes are more abundantly expressed in XX cells than XY cells in many tissues (30, 31). Recent evidence from mouse studies suggests that the inherent male-female difference in expression of X genes leads to significant sex differences in disease phenotypes. For example, sex differences in placental *Ogt* expression are associated with sex differences in prenatal vulnerability to stress (32). X escapee *Kdm6a*, a histone demethylase, contributes to sex differences in mouse models of bladder cancer (33), autoimmune disease (34), and Alzheimer disease (35). Similarly, variations in human *KDM6A* are associated with prognosis of bladder cancer or cognitive decline in female patients (33). The dose of another X escapee histone demethylase, *Kdm5c*,

contributes to sex differences in adiposity and body weight in mice, and variations in *KDM5C* in humans are associated with body mass (36).

Sex differences may also arise from genes in the pseudoautosomal regions (PARs) of the sex chromosomes, small regions of sequence similarity on the X and Y chromosomes that allow for X and Y chromosome pairing during meiosis. Both XX and XY cells have 2 PARs, implying equivalent effects of XX and XY PARs. Paradoxically, the process of X inactivation appears to spill over into the PAR and reduce expression on one X chromosome only in XX cells, leading to greater expression of PAR genes in XY cells compared to XX cells in the human transcriptome (30). A third potential source of X-linked imbalance stems from parentally imprinted genes in XX cells, which have one X chromosome from each parent and thus are influenced by any imprint on X genes from either parent. XY cells only receive imprints from the mother, and thus differ phenotypically from XX cells (37).

3. *XX mosaicism.* Female mammals are a mosaic of cells of 2 types: those expressing the X chromosome from the father (Xp), or from the mother (Xm) because of X inactivation (25). In contrast, XY individuals will lack this diversity within cell types in each organ because only one X (Xm) chromosome and only the maternal imprint of X genes will be expressed in each cell. The mosaicism in females means that in genetically diverse populations, the effects of disease-promoting X-linked alleles, inherited from one parent, will be muted in XX cells because half of the cells will have a different allele (38), and genomic imprints from each parent will only be expressed in half of the cells. In general, XX tissues are thought to have less extreme phenotypes than XY tissues, because the effects of extremely deleterious or beneficial alleles or imprints are buffered by the diversity of X alleles and imprints. For example, hemophilia A and hemophilia B (clotting factor VIII and IX deficiencies, respectively), are X-linked diseases that affect men, whereas most women are asymptomatic carriers.

### Sexual Differentiation Caused by Gonadal and Nongonadal Hormones

In mammals, the process of reproductive system development requires the action of hormones (peptide/gonadotropins and steroids) from the pituitary gland, the adrenal cortex, and the gonads. Testicular development leads to secretion of Müllerian inhibitory hormone (MIH, also termed anti-Müllerian hormone, AMH), a glycopeptide, and testosterone, which affects many sex differences in nongonadal tissues (39). In contrast to the fetal testis, the fetal ovary makes minimal steroid hormones

(40), and ovarian function is not needed for development of the female reproductive system, as evidenced by the normal female anatomy of individuals with Turner syndrome, who have 45,X gonadal dysgenesis. The pioneering work of Alfred Jost suggested that 2 classes of testicular hormones are involved in sexual differentiation. First, testicular androgens drive the differentiation of the fetal external genitalia from female morphology to that of the male and are required for the differentiation of embryonic Wolffian ducts into male internal reproductive structures (41, 42). Androgens, secreted by Leydig cells, are required for the differentiation of embryonic Wolffian ducts into male internal reproductive structures (epididymis, vas deferens, ejaculatory ducts, prostate, and seminal vesicles), and drive the differentiation of the undifferentiated external genitalia toward male morphology. Second, the testis produces locally acting MIH that causes involution of the Müllerian ducts, which would otherwise develop into the fallopian tubes, uterus, and cervix (43, 44).

It was long thought that only the involution of the Müllerian ducts was an active process, with the Wolffian ducts simply involuting in the absence of androgens. Recent evidence from mice indicates that Wolffian involution is also an active process controlled by the transcription factor COUP-TFII (22, 45), but the nature of any factors stimulating COUP-TFII remains unknown (22). Some aspects of gonadal differentiation are active throughout life,

preventing ovarian follicle cells from transdifferentiating into “testis-like” cells (11). MIH is secreted by Sertoli cells and androgenic steroid hormones, usually testosterone, are secreted by Leydig cells. Testosterone and its more potent derivative dihydrotestosterone are responsible for the development of the male external genitalia (46). Androgens from adrenal glands and alternative pathway androgen biosynthesis in the human placenta can influence virilization of the developing fetus (47, 48). The adrenals of adult primates also produce abundant androgens, profoundly influencing phenotypes, so that not all sex steroids are gonadal (see Boxes 1 and 2). Although the term *sexual differentiation* is usually applied to the development of sex differences in genitalia and other organs such as the brain in the growing fetus; sex differences also occur later in life during the mini-puberty of infancy (49), puberty, the female menstrual cycle, menopause in women, and andropause in men. The actions of gonadal and nongonadal hormones as well as sex and autosomal chromosome gene products in adult people causes many sex differences in health and disease.

### Influence of Gonadal Steroid Hormones and Nongonadal Hormones in Brain Development

Differentiation of the brain by gonadal hormones is implemented during a restricted critical window, which is operationally defined by the onset of copious androgen

#### Box 1. Steroidogenesis in gonadal and nongonadal tissues

All biologically active sex steroids, whether gonadal or nongonadal in origin, are derived from cholesterol by the process of steroidogenesis. Two steroidogenic steps must be considered (for details see (50)). First, the cholesterol side-chain cleavage enzyme, P450<sub>scc</sub> (CYP11A1) initiates steroidogenesis by converting cholesterol to pregnenolone; expression of P450<sub>scc</sub> renders a tissue “steroidogenic,” that is, able to make steroids *de novo* (51). The gonads, adrenals, and placenta express abundant P450<sub>scc</sub> and produce the familiar circulating endocrine steroids, but the brain, skin, and some other organs also express low levels of P450<sub>scc</sub> and produce steroids involved in paracrine actions. Brain steroidogenesis has been studied mainly in fetal rodents, with little information in other systems (52). Many nonsteroidogenic tissues (liver, kidney, fat, breast, heart) do not express P450<sub>scc</sub> but express other steroidogenic enzymes that modify steroids taken up from the circulation. Fat and breast express CYP19A1 (aromatase), permitting local production of estradiol from circulating 19-carbon (C19) steroids; this estradiol is important in breast cancer but is not a gonadal steroid. Similarly, prostate and genital skin express several enzymes leading to dihydrotestosterone, accounting for the failure of “androgen deprivation therapy” by gonadectomy in prostate cancer. Not all gonadal steroids are sex steroids, as both the ovary and testis secrete some “upstream” steroids that are precursors of the classic sex steroids. For example, dehydroepiandrosterone (DHEA) does not bind to sex steroid receptors, but it can be converted into testosterone and estrone. Second, synthesis of all sex steroids requires P450<sub>c17</sub> (CYP17A1), which catalyzes 17 $\alpha$ -hydroxylation and the 17,20 lyase activity that changes 21-carbon steroids to C19 precursors of androgens and estrogens. P450<sub>c17</sub> is abundantly expressed in the gonads of all vertebrates and in the adrenals of most vertebrates other than rodents, but the rodent *Cyp17A1* gene is silenced by tissue-specific methylation (53). Consequently, rodents make only miniscule amounts of adrenal C19 steroids and also use corticosterone instead of cortisol as their glucocorticoid. In most mammals, P450<sub>c17</sub> has low 17,20 lyase activity, so that their adrenals produce rather small amounts of C19 steroids, but primate P450<sub>c17</sub> has abundant 17,20 lyase activity, generating abundant C19 androgen precursors (DHEA, DHEA-sulfate, androstenedione) (47, 48). Furthermore, production of these C19 steroids proceeds by different pathways in rodents and primates: primates favor the “ $\Delta$ 5 pathway,” through DHEA, whereas rodents favor the “ $\Delta$ 4 pathway” through 17OH-progesterone (17OHP) (50). Primate adrenals also produce a true androgen, 11-keto-testosterone (54), profoundly influencing phenotypes (apocrine odor; female sexual hair). Thus, not all sex steroids are gonadal: ~ 50% of the circulating androgens in adult women are of adrenal origin.

**Box 2. Gonadectomy and sex steroids**

Many animal studies employ gonadectomy to eliminate the actions of sex steroids (estrogens, androgens, progestins). If using this approach, the investigator must consider whether nongonadal tissues will produce sufficient sex steroids to influence the study. The gonads produce most but not all circulating sex steroids; furthermore, some tissues produce steroids that act locally and do not enter the circulation, hence absence of a measurable steroids in blood does not ensure absence of its action in the target tissue. Both sexes produce all steroids and their metabolites, hence there are no male- or female-specific sex hormones, *per se*. In male mammals, testosterone release is highly pulsatile in nature (49, 55) and in laboratory mice, strain-dependent variations in androgen levels are reported (56). In female rodents, circulating levels of estradiol, testosterone, and DHT are highest in proestrus phase; a comprehensive analyses of sex steroids in intact and gonadectomized rodents can be found elsewhere (57). Circulating concentrations of testosterone in adult women are similar to those of boys in early puberty, and estradiol concentrations in men are similar to those in mid-cycle women, but the tenfold higher concentrations of testosterone obscure its effects. Rodents are widely used in research, but they differ from primates in several important aspects of steroidogenesis (see Box 1), and hence must be used with caution in studies seeking to model aspects of human physiology that might be influenced by steroids. These differences include: (i) In humans, substantial amounts of circulating sex steroids are bound to sex hormone-binding globulin (SHBG), whereas this carrier protein is not present in rodent circulation (58). (ii) Dehydroepiandrosterone (DHEA) and androstenedione, 19-carbon (C19) precursors for testosterone and estrone, that do not bind to sex steroid receptors, are secreted from the adrenal glands, the ovary and testis in humans, but not rodents (59). Thus, not all gonadal steroids are sex steroids. (iii) The rodent ovarian corpus luteum produces progesterone throughout pregnancy but in human pregnancy the corpus luteum involutes early in the second trimester, after which the placenta produces the progesterone needed to suppress uterine contractility, permitting term pregnancy. (iv) Adrenal-specific methylation of rodent *Cyp17A1* prohibits their adrenal synthesis of C19 precursors of sex steroids; however, changes in methylation status can occur under conditions of pathology. (v) As a further consequence of adrenal *Cyp17A1* methylation, rodents utilize corticosterone as their glucocorticoid, whereas almost all other vertebrates use cortisol. (vi) Rodent adrenals use high-density lipoproteins (HDL) taken up via scavenger receptor B1 (SRB1), as their principal source of cholesterol for steroidogenesis, whereas primates use low-density lipoproteins (LDL) taken up by receptor-mediated endocytosis. (vii) Several genes encoding steroidogenic enzymes are duplicated; rodents and primates differ in which copy(ies) of these genes are expressed: *CYP21*; *HSD3B*, *HSD17B*, *AKR1-3*. Such differences may affect laboratory results in unanticipated fashions. (viii) In rodents, nonsteroidogenic tissues such as the gut, liver, kidney, fat, breast, heart, thymus, skin, and the placenta have all been shown to make steroids. Thus, gonadectomy may eliminate most, but not all, circulating sex steroids, depending on the species being studied and may not reveal much about the paracrine effects of sex steroids present in the tissue(s) under investigation. Nonetheless, gonadectomy is an invaluable research tool that helps unequivocally confirm the influence of gonadal hormones in sex differences.

production from the fetal testis. Human fetal androgen production begins at 8 to 10 weeks postconception and in rodents is closer to parturition, at embryonic days 16 to 18, with birth following 2 to 4 days later. An important effect of this androgen surge is to masculinize the rodent brain. Steady but pulsatile release of the gonadotropins luteinizing hormone and follicle stimulating hormone from the pituitary gland support continuous steroidogenesis and production of sperm (60). In female rodents, the feminization of the brain proceeds in the absence of exposure to high levels of androgens or their aromatized byproducts, estrogens, a developmental strategy highly analogous to that used for masculinization of the gonads, reproductive tract, and secondary sexual characteristics, with the exception that estrogens are actively downregulated in male rodents. In human females, gonadotropins from the pituitary gland regulate ova development, induction of ovulation, and stimulation of estradiol and progesterone from the ovaries (49). An important feature of this developmental strategy is the existence of a sensitive period in female rodents (61). Male rodents must be exposed to high levels of

androgens during the critical period; if exposure occurs too early or too late it will be ineffective at inducing masculinization. However, females are also sensitive to androgens during a restricted period of development, hence a sensitive period in rodents. In males, the critical period closes shortly after androgen exposure because the cellular and molecular processes of masculinization have been initiated and cannot be reversed; the train has left the station. In both primates and rodents this process is largely prenatal, but female rodents remain sensitive to androgen exposure into the first postnatal week. Injecting a newborn female rodent with androgens will initiate the process of masculinization, thus she is still sensitive. After the first week, the feminization process cannot be overridden by androgens and thus the sensitive period has closed. The existence of the sensitive period in females is useful as a research tool—it is important in understanding the potential impact of exposure to endocrine-disrupting compounds or other cellular agents of masculinization that act in an analogous manner to androgen exposure in modulating female brain development. There is evidence for a later sensitive

period for brain feminization mediated by small increases in estrogens (62); this topic warrants further investigation. The closing of the sensitive period in primates, especially humans, remains poorly understood, but it appears to end prenatally, similar to the critical period in rodents. The sources of androgens that females can be exposed to during the sensitive period include from: (i) experimental interventions; (ii) male littermates in animals; (iii) or human adrenals carrying genetic mutations in the steroidogenic pathway (as in congenital adrenal hyperplasia).

Given that the critical and sensitive periods for sexual differentiation are defined by the production and response to gonadal steroids, it is not surprising that steroids are the primary drivers of developmental origins of sex differences in brain (and probably other tissues) and behavior. But how do steroids achieve this? The first step in any investigation is often is to identify the active steroid metabolite(s). In rodents, circulating fetal testicular testosterone enters the fetal brain where it can serve as a direct precursor for estradiol synthesis via aromatase (*Cyp19A1*) (see Box 1). Fetal and adult neurons can aromatize testosterone to estradiol in a nonrandom distribution: neurons of the hypothalamus, preoptic area, and amygdala are particularly active for local estradiol synthesis, whereas the hippocampus and parts of the cortex, midbrain, and spinal cord are also active at a lower level (63). For most reproductive endpoints, it is the local actions of estradiol that drive neural phenotype toward masculinization, which to some seems counterintuitive, given that estradiol is so often referred to as a “female” hormone (64), and further highlights that it is impossible to completely eliminate the effects of sex steroids, especially in the brain, by simple gonadectomy (see Box 2). Developing rodent embryos sequester maternal estrogens by binding to circulating alpha-fetoprotein, which is present only during the critical/sensitive period; when it is genetically deleted, all the offspring are masculinized (65). However, in humans, sex hormone-binding protein, not alpha-fetoprotein, is the major serum glycoprotein that binds androgens and estrogens with an undetermined role in fetal sexual development (66, 67).

In rodents, there is abundant evidence that gonadal androgens are metabolized to estrogens in the brain and mediate “masculinizing” effects on the brain; similar evidence in primates is limited. In primates, the principal masculinizing agents are androgens, not estrogens, and although there is alpha-fetoprotein present in fetal circulation, it has a weak binding affinity for estradiol (68), and instead it plays a much broader role in brain and body development (69). The conclusion of no strong role for estrogens in humans is based on individuals with dysfunctional aromatase or androgen receptors. Males lacking aromatase still identify as men,

while XY individuals with complete androgen insensitivity identify as women (70). The disparity between the principal differentiating hormones in primates versus rodents suggests that findings may not be easily extrapolated, and it is important to specify both the hormone and species under investigation. To discern whether the biological basis of sexual differentiation of brain and behavior differs between primates and rodents, one needs to identify mechanisms by which steroids transduce signals to modify the trajectory of the nervous system. While those mechanisms are incompletely understood, a few general principles are clear. First, there is no unified mechanism that applies broadly across the brain, with the exception that androgens and estrogens are the primary drivers of masculinization during a restricted developmental window. Similar masculinizing effects of testicular androgens may also occur during puberty (71). Second, all aspects of neural development are capable of being “organized” or programmed by sex steroids. This includes cell genesis, migration, myelination, dendritic and axonal growth and branching, synapse formation, synapse elimination, and neurochemical differentiation. Effects are not limited to neurons, with both astrocytes and microglia also exhibiting morphological sex differences. Third, each discrete brain region, nucleus, or subnucleus appears to have unique mechanisms of cellular masculinization. In some brain regions, such as the preoptic area, there are multiple separate mechanisms at play simultaneously. Sex steroids act in both paracrine and endocrine manners to influence structural development and function (72, 73).

### Biological Basis of Diversity in Sexual/Gender Development and Orientation

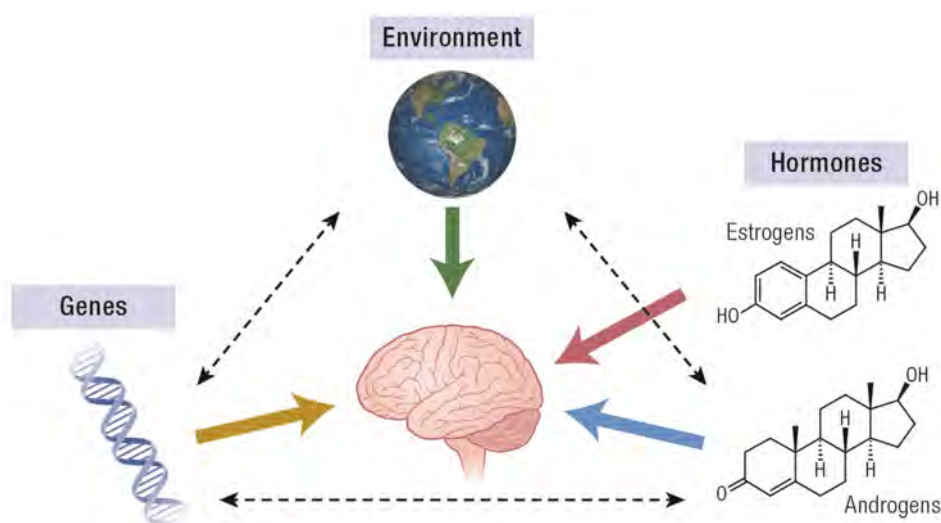
Given the complexities of the biology of sexual determination and differentiation, it is not surprising that there are dozens of examples of variations or errors in these pathways associated with genetic mutations that are now well known to endocrinologists and geneticists (74); in medicine, these situations are generally termed *disorders of sexual development* (DSD) or *differences in sexual development* (75). DSD includes genetic disorders in the sexual determination pathway (76), disorders of steroidogenesis (50, 77), disorders of steroid hormone action, especially androgen insensitivity syndrome (78), and less well-defined “developmental field defects” (79), such as Mayer-Rokitansky-Küster-Hauser syndrome (80). The study of genes and factors underlying DSD and the diagnosis and management of the various forms of DSD is a complex and rapidly evolving area of endocrinology: clinical management is complex (81) and requires both contemporary molecular genetics (82) and well-integrated interdisciplinary care (83).



Gender includes perception of the individual as male, female, or other, both by the individual and by society. *Gender identity* is a psychological concept that refers to an individual's self-perception; while associations between gender identity, neuroanatomic, genetic, and hormone levels exist, a clear causative biological underpinning of gender identity remains to be demonstrated. Both animals and human beings have biological sex, but only humans have evident self-awareness that allows them to express gender; self-awareness in animals has not been investigated in this context. Gender also includes differences that males and females experience in their social and physical environments, which can have differentiating effects on the sexes. Human social environments are poorly modeled in laboratory animals and thus animal studies are usually limited to addressing sex differences. For centuries, the concept of male and female did not distinguish between biological sex differences and those caused by consistent differences in the environments. Thus *sex differences* are those caused by biological factors, whereas *gender differences* reflect a complex interplay of psychological, environmental, cultural, and biological factors (Fig. 1).

At birth, individuals are assigned a sex or gender ("natal gender"), almost always based on the appearance of the

external genitalia. In most individuals, the various biological determinants of sex are consistent with one another, and this biological sex is also consistent with the individual's self-perception—the sex and gender are concordant. However, a substantial minority of people who do not have DSD have some degree of variation in their self-perception of their gender, which may differ from their biological sex; this is usually termed *gender incongruence* (84). The term *gender disorder* has been replaced with the term *gender dysphoria* which describes the distress that an individual might feel as a consequence of having gender incongruence. *Transgender* (often called *trans*) refers to individuals who do not identify themselves as being of their natal gender, whereas *cisgender* (*cis*) people do not experience gender incongruence (85). Readers are also referred to Endocrine Society's 2017 Clinical Practice Guideline and Transgender Health Fact Sheet (84). Estimates of the prevalence of male-to-female transgender individuals among general populations range from 0.5% to 1.3% and estimates for female-to-male transgender individuals range from 0.4% to 1.2% (85). State level population-based surveys indicate that 0.6 % of US adults (25-64 years of age) and 0.7% of adolescents and young adults (13-24 years of age) identify as transgender. Other studies of US high school



**Figure 1.** Simplified view of the factors influencing sex differences in the brain. Three broad groups of factors influence the sexually dimorphic brain, as indicated by the broad, colored arrows. 1) Genes and genetic factors that influence the brain include both those on sex chromosomes and autosomes, and include both the DNA itself (represented by the classic double helix) but also chemical modification of DNA (eg, methylation) and modifications of proteins associated with DNA to form chromatin, including histones, and also changes in proteins that bind to DNA. 2) Hormones clearly influence sexual dimorphism in the brain; these are represented by the principal sex steroids, estradiol and testosterone, but also include other steroid and protein hormones (progestins, MIH, oxytocin, prolactin, etc). 3) The environment includes a wide spectrum of influences, including perinatal nutrition and familial support, socioeconomic and demographic factors, intrinsic factors of brain development, age, and gender, and larger environmental factors, such as education, profession, and societal expectations (the "gendered environment"). In addition to each class of factor influencing the brain (bold arrows), the human brain also reciprocally influences each of these groups of factors. Furthermore, each group of factors influences the other, as represented by the dotted arrows. Some examples include: the environment influences genes via epigenomics and genes influence the environment by population sizes and domains; the environment influences hormones by seasonal variations and the actions of xenobiotics, and hormones influence the environment by promoting reproduction and consumption of foodstuffs; genes directly influence hormones by regulating their production and action, and many hormones, including all steroid hormones, regulate gene transcription.

students suggest a prevalence of 1.8% to 2.7% of being gender nonconforming or transgender (86-88). However, several factors may influence reported prevalence of gender dysphoria: (i) small sample sizes; (ii) differences in assessment techniques leading to incomplete ascertainment of gender dysphoric individuals; (iii) unwillingness of some individuals to respond fully and honestly, especially in older studies or studies deriving from locales where gender incongruence is a social taboo; (iv) differences in the subjects ages. *Sexual orientation*, not to be confused with gender identity, refers to the group of persons to whom an individual is sexually attracted; both cisgender and transgender individuals may be hetero-, homo-, or bi-sexual (89).

Although gender is strongly influenced by environmental and cultural forces, it is unknown if the choice to function in society in male, female, or other role(s) is also affected by biological factors (89-91). A general issue is that the association of sex, gender, or sexual orientation with specific brain structures, or with other biological variables, does not establish whether the biological variables are causes or consequences or noncausal correlates of the behavioral characteristics or function of the individuals studied. Three areas of biological difference have been studied fairly extensively: neuroanatomy, genetics, and hormones. Studies have reported differences in the hypothalamic INAH3 nucleus in men vs women and in homosexual vs heterosexual men (92, 93). Although initially controversial, others have confirmed sex differences in INAH3 numbers, not in size or densities, whereas no evidence for sexual dimorphism of any other INAH structures are reported (94). Studies in people with gender dysphoria found that the phenotypes of specific brain structures, such as the bed nucleus of the stria terminalis, of transgender women and transgender men differ from cisgender men and women, with partial, but incomplete sex reversal of sexually dimorphic structures (95). Brain networks involved in one's body perception, (pregenual anterior cingulate cortex, temporo-parietal junction, and fusiform body area) differ in individuals with gender dysphoria compared with cisgender individuals (96-98). Neuroimaging shows that testosterone treatment resulted in functional and structural changes in brain areas associated with self-referential and own body perception (99). Transgender men have thicker medial prefrontal cortex than cis men. Testosterone treatment does not change prefrontal cortex thickness in transgender men, but it has other effects on cortical thickness, connectivity, and fractional anisotropy (99).

Genetics may play a role in gender identity (100): monozygotic twins have 39% concordance for gender dysphoria (101). Attempts to identify specific genes governing gender identity have been plagued by small numbers of subjects and low statistical significance; no

specific gene has been reproducibly identified. However, such studies have suggested associations with genes encoding steroidogenic enzymes and sex steroid receptors, and it is generally agreed that androgens play an important but not determinative role. For example, many 46,XX individuals with severe virilizing congenital adrenal hyperplasia (steroid 21-hydroxylase deficiency) are exposed to intrauterine testosterone concentrations typical of those in normal male fetuses and consequently have severely virilized external genitalia; nevertheless, most have a female gender identity, but about 5% to 10% of such individuals have gender dysphoria, an atypical gender identity (89, 102, 103), or atypical sexual orientation and gender behavior (104, 105). Similarly, about half of 46,XY individuals with defects in androgen synthesis who were raised as females revert to a male gender role (106). The biological underpinnings of sexual orientation and gender identity are apparently related but are not the same (107). Thus, there is ample but incomplete evidence for biological substrates—neuroanatomic, genetic, and hormonal—for gender orientation, making this an important area of ongoing research.

### Hormonal Versus Sex Chromosome Effects

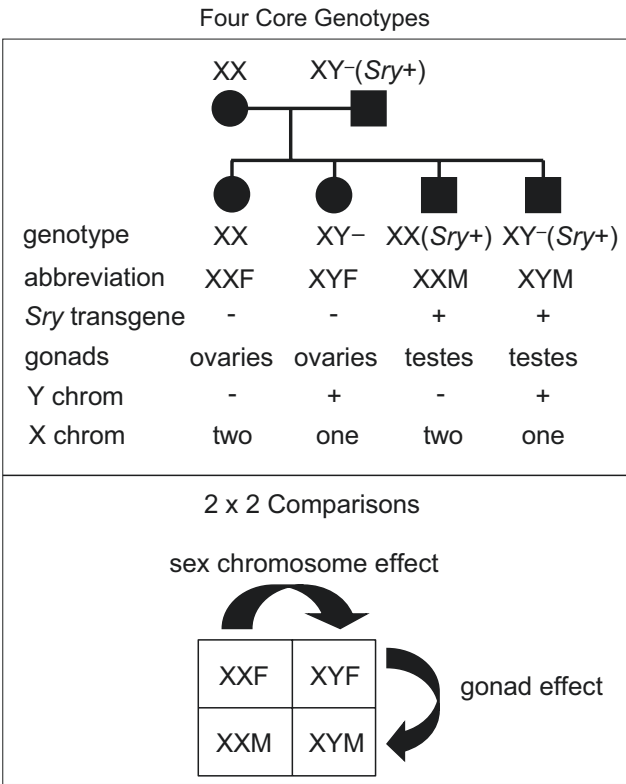
Sex differences are caused by 3 major factors—sex hormones, genes on sex chromosomes/autosomes, and environment (Fig. 1). To understand disease mechanisms in both sexes and exploit sex differences in protection or exacerbation of diseases, it is important to determine the relative contribution of each of these factors in causing sex differences (17). Many sex differences caused by gonadal hormones have been discovered by measurements of sex steroids and gonadotropins during human development, and in animals by similar measurements or by interventional methods, such as gonadectomy, hormone administration, or the expression of synthetic enzymes or receptors in transgenic mice. Sex steroids play an integral part in many physiological processes (Box 1). Whereas the gonads are the major site of sex steroid synthesis, the adrenals, placenta, brain, and skin can also initiate steroidogenesis, and steroid-modifying enzymes are found elsewhere, especially in liver and fat, permitting synthesis of sex steroid hormones in multiple other sites (50). Thus, animal gonadectomy may provide information about endocrine effects of gonadal steroid hormones but cannot address tissue-specific paracrine effects (Box 2). Moreover, gonadectomy cannot mimic low pre-pubertal levels or physiological conditions in which hormone levels decrease, such as aging or menopause. Manipulations of human gonadal hormones are routinely used in contraception and in the management of sex steroid-dependent cancers (eg, breast, prostate). When

a sex difference is discovered in human disease, and modeled in animals, the investigation of possible hormonal causation of the sex difference is usually the first option considered.

To detect effects of sex chromosomes that cause sex differences, one can compare people who have differences in their sex chromosomes, revealing effects of X or Y chromosome number (108-110). These results strongly suggest direct sex chromosomal contributions to sex differences in cell function. Comparison of brains of XY patients with complete androgen insensitivity (who are phenotypically female), with brains of control XY males and XX females, suggests that cortical thickness and functional connectivity between the limbic regions and the cortex are influenced not only by testosterone actions, but by sex chromosome factors as well (111). However, changes in the sex chromosome ploidy also alter gonadal hormones, so it can be difficult to isolate sex chromosome effects not mediated by gonadal hormone effects. Circulating human embryonic/fetal sex steroid concentrations are poorly characterized, and the tissue concentrations are almost totally unknown. Another approach is to use mice to identify genes on the X or Y chromosome that act outside of the gonads to cause sex differences, and then seek evidence that the orthologous human genes cause human sex differences. Controlled experiments are possible in which XX or XY mice with comparable gonadal hormones can be compared. A frequently used model is the Four Core Genotypes (FCG) model, in which the testis-determining mouse *Sry* gene is deleted from the Y chromosome (creating the Y<sup>-</sup> or “Y minus” chromosome) and inserted as a transgene on chromosome 3 (*Sry*<sup>+</sup>) (Fig. 2 and Box 3) (112). The utility and limitations of these models have been extensively discussed (113, 114).

### Considering Sex and/or Gender as Variables in Health and Disease

Women and men differ in many physiological and psychological variables. It is important to establish the mechanisms causing such differences in health and disease, and to consider sex-related variables in studies of human health and disease. These variables include, but are not limited to, sex- and gender-related factors. The inability to control all variables in human studies means that it may be impossible to determine the relative roles of environment and biology in causing a difference between women and men, when both types of variable can influence the trait. Furthermore, while “gender expression/behavior” can be observed, “gender identity” can only be known by what an individual states. Thus, gender identity, *per se*, cannot be studied in animals. In human studies, it is unethical to selectively manipulate specific biological and environmental variables, and most currently available data derive



**Figure 2.** Schematic diagram of the Four Core Genotypes mouse model. The testis-determining gene *Sry* is deleted from the Y chromosome, producing the Y<sup>-</sup> chromosome. An *Sry* transgene is inserted onto chromosome 3. Thus, the type of gonad is no longer linked to the sex chromosomes. The model produces XX and XY mice with *Sry* and testes, and XX and XY mice without *Sry*, with ovaries. Sex differences in phenotype can be attributed to an effect of gonadal hormones, comparing mice with ovaries and testes, or to an effect of sex chromosomes, comparing XX and XY mice with the same type of gonad. [Modified with permission from Arnold AP & Chen X. *Front Neuroendocrinol*, 2009; 30(1) © Elsevier Inc. (112)].

from studies comparing groups of men with groups of women. It is therefore difficult to disentangle the specific contribution of sex-related genes, hormones, gender-related variables, and other variables that contribute to being female or male. Because sex has long been defined by gonadal type, the list of sex-influencing factors has been primarily associated with gonadal hormones, especially estrogens, progestins, and androgens (121). However, some phenotypic sex differences develop before the gonads differentiate as testes or ovaries (122), so other factors also contribute to sex differences (123) but are seldom considered.

Sex is an essential part of vertebrate biology, but gender is a human phenomenon; sex often influences gender, but gender cannot influence sex. Studies of animal physiology must consider sex as a variable (124), with sex steroids (of both gonadal and nongonadal origins), sex chromosomes, and other factors contributing to sex differences in many physiologic processes. Similarly, studies of human physiology and disease must also consider sex for the same reason (125) and its disorders must

**Box 3.** Investigating sex chromosome complement versus gonadal hormones in health and disease: the four core genotypes (FCG) model

The FCG model allows for discriminating hormonal vs sex chromosome effects in animals. Gonadal males (XY<sup>-</sup>(*Sry*<sup>+</sup>)), bred to XX gonadal females, produce 4 types of offspring: XY<sup>-</sup> and XX mice with the *Sry* transgene and testes, and XY<sup>-</sup> and XX gonadal females lacking the *Sry* gene (Fig. 2). Thus, it is possible to compare XX and XY mice with the same type of gonad, in 2 separate comparisons. Differences between XX and XY are attributed to effects of sex chromosome genes acting on nongonadal tissues. To determine if this sex chromosome effect is caused by X or Y genes, a second model is studied, the XY\* model (113, 114). This model produces genotypes that are similar to XO, XX, XY, and XXY. An effect of number of X chromosomes is discovered by comparing XO and XX, or XY and XXY. An effect of the Y chromosome genes is discovered by comparing XO and XY, or XX and XXY. These mouse models have been used to demonstrate sex chromosome effects causing sex differences in a wide variety of phenotypes and disease models, including brain and behavioral phenotypes, metabolism, autoimmune, cardiovascular and pulmonary diseases, Alzheimer disease, aging, and cancer (35, 113, 115). These models have facilitated discovery of several disease phenotypes in which the number of X chromosomes contributes to sex differences (116), and a smaller number of sex-biasing effects of Y genes (117). Sex chromosome effects occur in the same disease systems alongside sex-biasing effects of gonadal hormones, such that the 2 effects can synergize to increase the amount of sex difference, or counterbalance each other to reduce a sex difference. Moreover, genes encoded on the Y chromosome can have gene-specific effects, and/or effects that overlap with those of X genes (118). In the cardiovascular system and associated physiological/disease states, sex chromosomes and gonadal hormones can have opposing effects. Estrogens generally protect from cardiac ischemia/reperfusion injury and other cardiovascular diseases, reducing disease in female relative to male mice. However, studies of ischemia/reperfusion injury in gonadectomized FCG mice reveal that the XX sex chromosome complement is associated with worse outcomes, relative to XY (119). In another study, sex chromosome effects in angiotensin II-induced hypertension showed that arterial pressure was greater in gonadectomized XX mice than in gonadectomized XY mice (120). Sex chromosome complement also influences the development of abdominal aortic aneurysms, fat metabolism and adiposity, plasma lipids and lipoprotein levels (particularly HDL-C) (115).

also consider gender. However, human gender is a spectrum from feminine to gender-neutral to masculine, and also likely includes individuals who do not fit readily on a simple linear continuum (84). Studies addressing the endocrine care of transgender youth during the time of their potential gender transition (84, 89) find that they have a higher prevalence of stress-associated mental health disorders such as depression and anxiety, which can be ameliorated by gender-affirming endocrine treatment (126). It is essential to recognize these sex and gender differences as our health care systems endeavor to develop “individualized medicine.”

Despite the fact that biological sex is such a fundamental source of intraspecific variation in anatomy and physiology, much basic and clinical science has tended to focus studies on one sex (typically male). Few studies have done side-by-side testing for sex differences at baseline and in experimental models of human diseases (127-129). Studies in laboratory animals that manipulate biological (eg, genes and hormones) and environmental variables (eg, housing conditions, diet, physical activity, etc) demonstrate that many variables can affect sex-related aspects of an animal's physiology. However, laboratory rodents may show male-female differences caused by different housing conditions, which could be misinterpreted as being caused directly by biological differences without environmental mediation. In studies concerning animal behavior, the sex and gender of the researcher conducting behavioral measures may also influence outcomes (130). Thus, for reproducibility and proper interpretation of the data, at the minimum, it is important to state the precise housing

conditions, anesthetics, analgesics (different effects in sexes), doses, surgical manipulations, diet, sex, strain, species, and age of animals used, as well as sex/gender of the researcher(s) performing experiments.

Having laid the foundation for several factors that contribute to sex versus gender, this Statement will use 3 areas of research as examples (not as a literature review) where human and animal sex differences are well known. First, sex differences in specific brain regions of healthy men and women are increasingly being documented along with differences in brain connectomes; these will be discussed in detail in Section II. Second, stress-related pathophysiologies are known to affect twice as many women as men. However, few studies systematically include study designs to ascertain function or mechanisms that may be similar or different between males and females. Hormones and signaling pathways that contribute to sex-specific differences in stress-based pathophysiologies will be discussed in Section III. Similarly, sex differences in manifestation of cardiovascular and renal diseases are well recognized and will be discussed in Section IV.

## Section II

### Developmental Origins of Sex Differences in Brain Anatomy, Function, and Behavior

Sex differences in the human brain are a topic of intense popular and scientific interest. Several scientific observations motivate the search for sex differences in brain structure



and function. First, the act of sexual reproduction requires that the male and female animals show qualitatively different reproductive behaviors. The stereotyped emergence of these reproductively critical and sexually differentiated behavior reflects biologically programmed (or “innate”) sex differences in the organization of those brain circuits that support the motivational and consummatory phases of copulatory behavior (131). Second, the fact that males and females make different biological investments in reproduction—eg, the risks of pregnancy in mammals are borne entirely by the female—sets up sex differences in the behavioral strategies that optimize reproductive fitness (132). Sexual selection based on sex-biased behavioral strategies is predicted to drive the evolution of sex differences in those brain circuits that are responsible for sexually selected behaviors. Third, males and females can show consistent sex biases in broader behavioral domains beyond those that directly relate to reproductive strategies. In our own species for example, there are highly consistent sex differences in the prevalence of physical aggression and violence (both male-biased) (133), as well as extensively documented sex differences in risk for different mental disorders (134).

In this section, we will first describe the main neuroimaging techniques commonly used in comparisons of brain anatomy, connectivity, function, and subnetwork organizations. We then review the key aspects of sex-biased brain anatomy and connectivity that have been revealed by these techniques; sex differences in stimulus-based or task-based functional magnetic resonance imaging (fMRI) studies are not addressed here. Next, we discuss specific disease states that appear to have different outcomes in the 2 sexes due to baseline differences in the “connectome” and animal models used in neuroimaging. Finally, we will address some important caveats and controversies in the field of brain imaging.

## Brain Imaging Techniques

Modern neuroimaging methods make it possible to characterize diverse aspects of brain structure, function, and connectivity in vivo. This large toolbox of methods has been used to examine sex differences in brain organization at several levels of analysis. These techniques aim to analyze, map, and visualize regional and inter-regional (connectomic) features of the brain at macroscopic (systems-level) and mesoscopic (neural circuit architecture) levels in order to illuminate brain organization in health and disease (135). Of note, cellular-level details are beyond the resolution of most in vivo brain imaging techniques.

Sex differences in global and regional brain anatomy can be measured in vivo using structural magnetic resonance imaging (sMRI). Several considerations have made

sMRI an especially popular technique in the study of brain sex differences in humans. First, sMRI allows a quick and spatially comprehensive screen of the entire brain that can quantify thousands of morphometric properties simultaneously in vivo across a large number of individuals. These characteristics not only facilitate testing for sex differences outside defined regions of interest, but also allow longitudinal measurements that can track the emergence of brain sex differences over development (136, 137). Second, because sMRI considers structure rather than function, it can leverage evolutionary conservation of the basic mammalian brain plan (138), and it is therefore particularly well-suited for cross-species investigation of sex differences in humans and animals. Thus, a critical role for sMRI research in the study of brain sex differences is to screen for brain regions that can then be prioritized for closer analysis using more resource-intensive assays that are typically applied in a regionally selective manner.

Complimenting sMRI, other in vivo neuroimaging techniques such as diffusion MRI (dMRI), resting state functional MRI (rs-fMRI), and fMRI provide unprecedented insights into tissue microstructure and brain connectivity. fMRI maps brain circuitry based on stimulus- or task-based brain functional responses. In contrast, rs-fMRI, by measuring changes in blood flow in the brain generated by signals dependent on blood-oxygen-levels, helps explore the brain’s functional organization by providing insights into intrinsic brain activity without requiring participants to be trained in specific tasks, thereby eliminating task performance as a confounder (139, 140). dMRI measures the differential patterns of water diffusivity in biological tissue revealing details of tissue microstructure, especially in white matter (141). Fiber tractography on dMRI enables mapping the fiber architecture of the brain, and subsequently, the network organization of the brain through structural connectomes (142–144). A brain connectome is an extensive map of the white matter structural or functional connections of the brain, created using dMRI or rs-fMRI (145). Modeling efforts, such as the Human Connectome Project, and the use of connectome-based predictive modeling, have provided an integrative, in-depth, and multilevel understanding of the structural and functional connectivity (regions that get coactivated) of the neuronal networks (146, 147).

## Sex Differences in Global and Regional Brain Anatomy

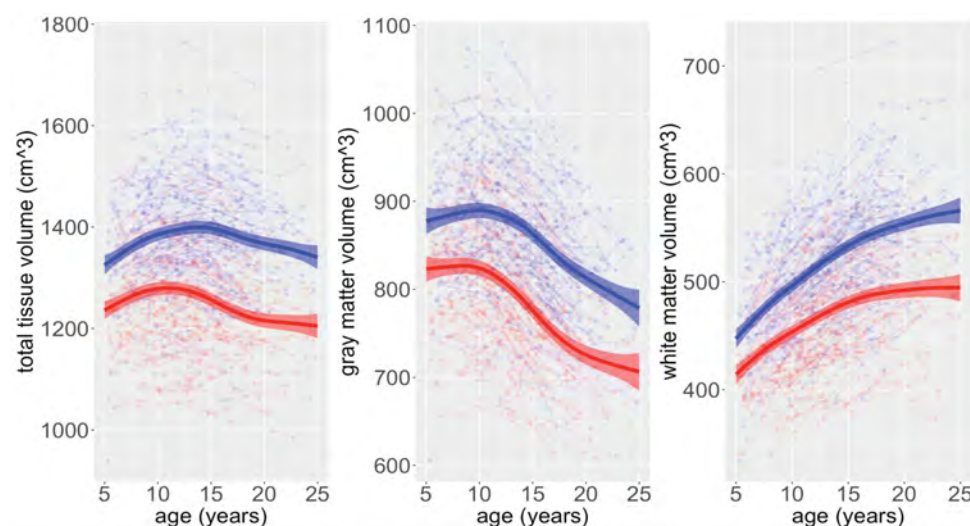
It is well established that men have an average total brain volume that is approximately 10% greater than that of women (148, 149). A similar sex difference in average

human brain volume (~8%) appears to be present at birth (150) and is sustained throughout childhood and adolescence (151). The sex differences for total brain volume also hold for the 2 main subdivisions of brain tissue—gray matter and white matter—despite these 2 brain compartments following very different developmental trajectories (151, 152) (Fig. 3).

The robust sex difference in brain volume identified through human sMRI research cannot be fully explained by the fact that brain volume is positively correlated with height (average height is greater in men than in women). Statistical control for body size diminishes, but does not remove, sex differences in total brain volume (149), and boys also show greater average brain volume than girls during early adolescent development, at a time when girls are taller than boys (153). Thus, available literature supports a consistent picture in which there is overlap between the distribution of brain size in men and women, but the mean of this distribution is significantly greater in men than women. The medium effect size of sex on brain volume exists above and beyond sex differences in stature. However, it is important to note that no known functional sex differences associate with the sex difference in overall brain size. Sex differences in overall brain size, and their developmental timing, are both theoretically and methodologically important when considering: (i) whether neuroanatomical sex differences are conserved across species; (ii) whether there are sex differences in regional brain anatomy above and beyond sex differences in overall brain size; and (iii) whether

there is concordance between sex differences in brain size and any observed associations between brain size and putative biological causes of sex differences, such as gonadal or sex chromosome status (see below).

The patterning of sex differences in behavior and mental illness risk across the lifespan suggest that sex differences in human brain organization are likely to vary across different brain sub-systems or regions, and potentially also across different developmental periods. Structures in human gray matter compartments mediate neural computation and information processing—in contrast to axon-rich white matter compartments that are primarily involved in connectivity between different brain regions (see “Sex Differences in Brain Network Organization: The Brain Connectome,” below). Here, we focus on sMRI studies that have tested for sex differences in regional gray matter volume (regional GMV) after controlling for sex differences in overall brain size. Regional GMV sex differences that survive statistical correction for total brain volume variation are of special interest because they exist beyond global sex differences in brain size. We emphasize GMV rather than other morphometric properties of the brain such as cortical thickness, sulcation, or the shape of subcortical structures (144, 154), because GMV provides a common metric that can be examined across cortical and subcortical structures, with equal applicability to humans and mice. Independent large-scale human sMRI studies in biobanks have identified a reproducible pattern of sex differences in regional GMV using sample sizes that are



**Figure 3.** Developmental trajectories for total brain tissue volume, gray matter volume, and white matter volume in men and women over Development. Person-level data are shown for women (red) and men (blue) as points, with lines linking measures from the same person over time. Note the large interindividual variation in volumes within each sex, and the overlap of these distributions, between the sexes. Superimposed on these person-level data are group-level best fit volume trajectories (bold lines with shaded 95% confidence intervals). The developmental window covered is 5 to 25 years of age. For all plots, there are statistically significant sex differences in both trajectory shape (ie, sex differences in the tempo of volume change,  $P < 0.00001$ ), and trajectory “height” (ie, sex differences in absolute volume across ages,  $P < 0.00001$ ). [Adapted with permission from Giedd JN et al. *Neuropsychopharmacology*, 2015; 40 © Springer Nature (153)].

significantly larger than those used in earlier work (148, 149, 155). A structural neuroimaging study involving >2000 individuals demonstrated that higher regional expression of sex-linked genes was coupled with greater GMV in men relative to women (155). These studies, by different laboratories, using different datasets and different techniques for sMRI analysis, find a largely overlapping regional pattern of GMV sex differences after correction for sex differences in total brain volume. These independent replications of regional sex differences in GMV are also in agreement with meta-analytic studies (156). Together, these studies show that, in adulthood, regional GMV is (on average): (i) greater in women than men within superior parietal, dorsolateral frontal, and anterior cingulate cortices; and (ii) greater in men than women within occipital, fusiform, and parahippocampal cortices as well as the amygdala and putamen. Furthermore, while these studies lack temporally resolved developmental maps of male-female differences in regional GMV throughout the brain, there is extensive evidence from focused studies of particular structures that neuroanatomical sex differences can vary dynamically over development, such as observed with amygdala volume and shape (156).

The rapidly expanding body of sMRI research on regional GMV sex differences in the murine brain shows important overlaps and differences with findings from human studies (137, 157). These murine sMRI studies—which are most commonly conducted *ex vivo* at a spatial resolution of <100  $\mu\text{m}$  throughout the whole brain—have been able to confirm the identification of all classically sexually dimorphic nuclei of male-biased volume from prior histological research, including the bed nucleus of the stria terminalis and medial amygdala (137, 157). These brain regions play a predominant role in modulating social and goal-directed behaviors, pain, and cardiovascular control, all of which are conserved among mammalian species and subject to sexually dimorphic outcomes. By allowing a full-brain screen, murine sMRI has also newly identified a reproducible set of regions with greater GMV in females, including the cerebellar cortex, ventral thalamus, and somatosensory cortex (137, 157). Furthermore, a longitudinal sMRI study in mice found that the set of regions with male-biased GMV can be detected by early postnatal life (with some accentuating over puberty), whereas regions of female-biased GMV in murine adulthood appear to emerge in adolescence (137). To date, there are no studies that formally seek to compare the spatiotemporal patterning of regional GMV sex differences in humans and mice, although existing work already suggests some potential homologies, including foci of greater cerebellar cortex GMV in females vs males by adulthood (137, 148) and the adolescent accentuation of male-biased amygdala volume (158, 159).

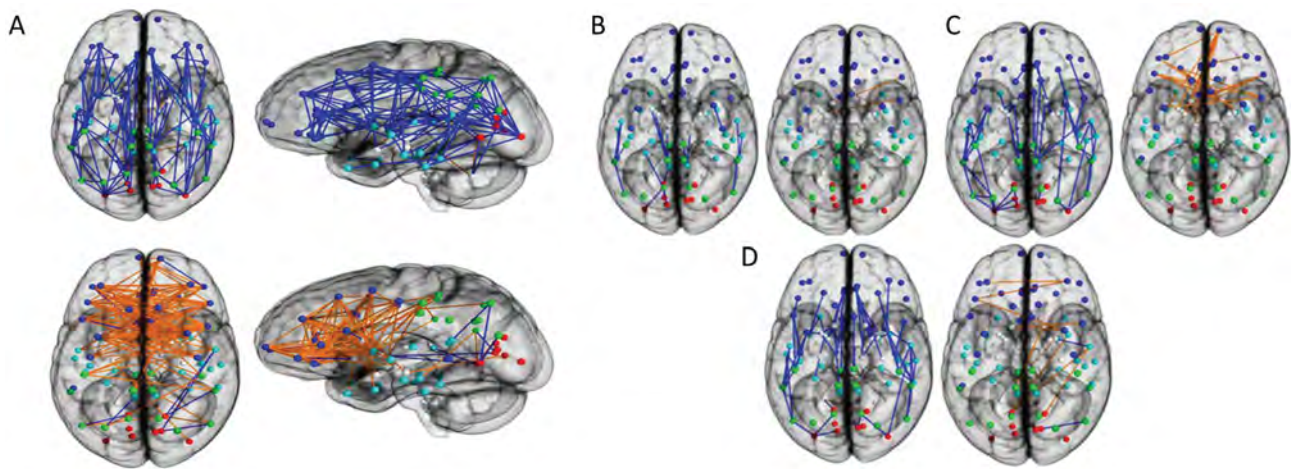
An important technical challenge in assessing the degree of anatomical homology between regions of sex-biased brain anatomy in humans and mice is that most of the best-established and histologically validated foci of sex-biased brain volume in mice (eg, bed nucleus stria terminalis, medial preoptic nucleus of the hypothalamus) are hard to image in humans due to their small size and intrinsic tissue contrast properties.

### Sex Differences in Brain Network Organization: The Brain Connectome

The structural or functional brain network is represented by a “connectome,” wherein the structural or functional connectivity between coactivated regions is encoded either through fiber tracts or functional co-activations (160). These connectomes can be studied at the level of subnetworks like visuospatial, auditory, cognitive control, or macro-scale level through global measures of network segregation, integration, and efficiency, to obtain functional associations (161).

A study of 949 individuals (aged 8–22 years; 428 males and 521 females) showed that on average, there are significant differences between the sexes in their structural connectomes (Fig. 4) (162). On average, men had greater within-hemispheric connectivity, as well as enhanced network segregation, whereas between-hemispheric connectivity and network integration predominated in women (Fig. 4A), but these differences were most prominent during adolescence (Fig. 4B–4D). However, an opposite trend was seen for cerebellar connections, which developed differently between human males and females in adolescence and adulthood. The structural connectivity findings were consistent with a behavioral study conducted on the parent cohort (the above-mentioned imaging study was performed on a subset of participants), with women outperforming men on attention, word and face memory, and social cognition tasks, and men performing better on spatial processing and motor and sensorimotor speed tasks (163). An analysis of the Human Connectome Project rs-fMRI data identified age and sex as independent variables that contributed to differences in functional connectivity (164). In brains of men, functional connectivity was more clustered locally in all lobes, except in the cerebellum, whereas the brains of women showed a higher clustering coefficient at the whole-brain level. Thus, brains of men were classified as more segregated and brains of women as more integrated, which agrees with the structural connectivity findings (162). In connectomes, the identification of subnetwork properties (165) can reveal how the complex functional and behavioral repertoire emerges from the simultaneous processes of segregated neuronal clusters and their





**Figure 4.** Sex differences in structural connectomes across development. Connectomes representing the white matter structural connectivity in the brain, with nodes indicating the brain regions and edges between the nodes representing the structural connectivity between the nodes. Node colors representing respective brain regions are as follows: dark blue, frontal; cyan, temporal; green, parietal; red, occipital; white, subcortical. The depicted edges shown are those that survived permutation testing at  $P = 0.05$ . **A**, shows increased intrahemispheric connectivity in men (Upper, in blue) and increased inter-hemispheric connectivity in women (Lower, in orange) on average. **B-D**: Connectivity differences shown in **A** separated by age groups are shown: **B**, under 13 years, **C**, adolescent (13-18 years), and **D**, young adults (18-22 years). Left image: Men/Boys; Right image: Women/Girls. [Adapted with permission from Ingallhalikar M et al. *Proc Natl Acad Sci U S A*, 2014; 111(2) © National Academy of Sciences (163)].

integration during complicated cognitive tasks (166, 167). Consistent with the behavioral findings on sex differences, men had increased connectivity between motor and sensory (auditory) systems, along with increased connectivity in the fronto-parietal and cingulo-opercular systems that are traditionally associated with complex reasoning and control, whereas women had higher connectivity between reward, memory, and sensory (auditory) systems (163, 168). Better spatial skills in men and improved memory and social cognition skills in women have been reported in behavioral literature (169, 170).

It is important to point out that observed group-level differences in brain structure, function, or connectivity in men and women may reflect the influence of several extraneous factors. For example, in a set of elegant studies, brains of men were imaged to ascertain the contribution of performing complex spatial navigation tasks as part of their daily work on gray matter volume. These studies found that posterior hippocampi of London taxi drivers were significantly larger compared with controls (171), although the work did not address sex differences. Driving a taxi in London before the era of digital maps/navigation systems required extensive training and learning to navigate complex routes before being given a license to operate. In a subsequent study, comparison between London taxi drivers and bus drivers matched and controlled for age, education, intellectual, and stress levels, as well as years of driving experience, showed that taxi drivers had greater GMV in the posterior and less volume in the anterior hippocampi compared with bus drivers (172). Interestingly, years of

navigation experience associated with hippocampal volume in taxi drivers alone, but they were significantly worse at acquiring or retrieving novel visuo-spatial information than bus drivers. Importantly, no differences in other GMV, including the caudate nucleus, were found between the taxi and bus drivers; the caudate nucleus is associated with a myriad of cognitive and emotional functions. These studies illustrate brain plasticity and that professional work and years of performing certain tasks can result in brain structural, volume, and connectivity differences that may have little to do with sex or gender per se, but more with training, social environments, and behaviors. In other studies, GMV changes were greater in professional musicians, or after induced training (juggling for 3 months), and in early bilinguals, and white matter volume changes were found in adults learning a second language, irrespective of sex, when reported (173-176). These findings suggest that brain structure retains its plasticity and controlling for factors other than sex or gender are key in interpreting data on structural volumes and associated functions.

The above-mentioned existing datasets did not collect the requisite information on self-report of gender, thereby precluding retrospective analysis of gender in these cases. As identifying correspondence between behavioral scores and the regions that are involved in the manifestation of that behavior remains challenging, analyses of subnetworks pertaining to functional and behavioral domains can help elucidate a brain-behavior correspondence. The detailed description of sex differences in brain organization at the group level, and concerted efforts to specify

the role of sex-biased biological factors in shaping such sex differences, is of fundamental importance (177) and also provides a crucial adjunct for indispensable studies on environmental and wider societal contributions to sex-biased brain development. Such studies should be undertaken jointly using structural and functional connectivity. These studies elucidate the various ways in which sex differences in brain microstructure and connectivity can be investigated.

### Sex Differences in Structural and Functional Brain Regions in Obesity

The hypothalamus has long been known as the “center” where peripheral and neural signals converge in the regulation of food intake and energy homeostasis in both sexes. Advances in neuroimaging studies have helped identify activation of several distinct brain regions comprising brain networks in response to eating in men and women. Behavioral and sociocultural factors may play a role in the observed sex differences in ingestive behaviors, appetite, and cravings related to obesity (178). Women report higher prevalence of maladaptive ingestive behaviors such as binge eating, food cravings, and “food addiction,” and the lifetime prevalence of disordered eating behaviors are about 3 times higher in women than in men (179, 180). Women also experience episodes of food cravings of greater intensity (181, 182), and greater frequency (183-185), and are less able to suppress food cravings than men (184, 186). Despite the wealth of data indicating that women experience disproportionately higher rates of food cravings, stress eating, and eating disorders than men, the reasons for these differences are incompletely understood (184, 187).

Regulation of food intake entails both homeostatic and nonhomeostatic factors (188). Homeostatic regulation balances energy needs with energy consumption, whereas nonhomeostatic regulation—in particular hedonic regulation and food addiction—involves reward-seeking behaviors that drive humans and animals to consume food beyond their metabolic needs, leading to the development of obesity (189-191). These findings have directed attention toward the extended reward system in obesity-related research, which consists mainly of basal ganglia regions and is involved in dopamine signaling and addiction-like behaviors (192). The extended reward system is composed of 6 interconnected brain networks—salience, central autonomic, basal ganglia, somatosensory, executive control, and emotional regulation (192).

Functional MRI studies have found that, in response to food images, obese individuals show greater activation than normal-weight individuals in regions associated with

reward anticipation, dopamine signaling, and addiction-like behaviors (193-196). Greater activity in brain regions of the extended reward network may drive obesity-related behaviors, such as greater responses to food odors and food consumption (197-199). Recent meta-analyses have further supported the role of the brain in disrupting the balance between energy consumption and expenditure. This combination of increased activity in regions associated with reward-driven behaviors and decreased activity in regions moderating top-down control of appetite may lead to consumption of excess calories (188).

Furthermore, sex-specific activations in response to food intake have been observed in cognitive, emotional, and reward-related regions (200-202). For example, obese men had greater activation than obese women in the supplementary motor area, precentral gyrus, fusiform gyrus, and inferior parietal lobule, which are associated with motor control, visuospatial attention, and responding to salient new or alerting stimuli (203). In this same study, obese women showed greater activation than obese men in the caudate and parahippocampal gyrus, regions implicated in reward processing and memory (203). Using graph theory to define the underlying architecture of brain structural connectivity obtained from diffusion tensor imaging, sex differences were observed in the topological measures of centrality (which determine the degree of information flow in specific brain regions) in regions of reward and salience networks in women, and in reward and sensorimotor networks in men (204). Resting state fMRI studies have found sex differences and commonalities in body mass index (BMI)-related connectivity associated with specific defined regions of interest in the reward network (205). For example, women had increased associations between BMI and increased connectivity in the in right globus pallidus and bilateral putamen. In men, BMI was associated with increased connectivity in the medial frontal cortex. A study of sex differences in response to visual and auditory food cues found that women experience greater activation in lateral and dorsolateral prefrontal and parietal cortical regions involved in cognitive planning and executive guidance and evaluation of behavior, compared with men (202). When viewed together, these studies highlight the importance of investigating sex differences in obesity-related alterations in the core and extended reward networks.

Although many single-sex studies of fMRI and obesity have been published, with the majority having all-female subjects, few studies have specifically investigated sex differences in brain function and structure in obesity. Despite the literature supporting sex differences in the brain, including in regions implicated in reward behaviors and energy homeostasis, few comprehensive reviews of sexually dimorphic brain signatures related to obesity have

been performed. A recent meta-analysis using an activation likelihood estimation approach to evaluate comparisons in functional responses to stimuli by obesity and by sex revealed differential sex- and BMI-related activations in reward anticipation and response, in shaping food-related memories, and in generating top-down control of appetitive processes. Together, these findings have important implications for sex-specific obesity treatments.

### Models to Study Sex Differences in Normal Brain Structure and During Pathophysiology

Studies of sex differences offer important considerations for personalized medicine. The prevalence, clinical presentation, and symptomatic progression of many neurological and psychiatric disorders are remarkably different between the sexes. In addition to common X-lined mental retardation syndromes, men have a greater prevalence of neuropsychiatric disorders such as autism, attention-deficit/hyperactivity disorder (ADHD), and Tourette syndrome (206), whereas women have a greater prevalence of mood and eating disorders (207, 208). From the perspective of developmental disorders, the differences in the developmental trajectories of the sexes perhaps represent different vulnerabilities of maturing brain circuitry, leading to differences in symptoms, onset, and severity of neurological disorders. There are also sex differences in the risk factors, average age of onset, and prevalence of late-life dementias, as well as cerebrovascular disease (209). Additionally, in traumatic brain injuries, where the network organization of the brain is affected by the injury, such as the corpus callosum region, sex differences in inter-hemispheric connectivity and brain subnetworks may influence the impact of injury, and hence subsequent recovery. Thus, sex differences in brain connections are crucial to identify, as they may elucidate mechanisms in disease risk and potential treatment and recovery (210).

Most models of sex-biased mammalian brain development are based on experimental data from rodents (now largely from mice, but previously also from guinea pigs and rats). One of the most systematic dissociations of gonadal and chromosomal contributions to sex-biased anatomical brain organization in mammals is provided by a recent sMRI study of adult mice from the FCG model (112, 211). By combining sMRI with behavioral assays, these studies determined the contribution of sex chromosomes and gonads to adult mouse brain structure and function (211). This study revealed: (i) an effect of sex chromosomes on regional GMV in the cerebellar cortex and olfactory bulb; and (ii) an effect of gonads on regional GMV in the parietotemporal cortex and the bed nucleus of the stria terminalis. Some of these effects overlapped

with regions of normal sex differences in murine GMV (eg, cerebellar cortex and bed nucleus of the stria terminalis), and some brain regions were anatomically sensitive to both effects (basal forebrain and periaqueductal gray matter). Sex-chromosome effects on regional gray matter anatomy have also been reported by complementary sets of sMRI studies in both mice and humans that compare groups of euploid individuals with groups carrying X-chromosome aneuploidy (157, 212). Finally, in both mice (137) and humans (155), the spatial patterning of sex differences in regional GMV in adulthood appears to be preferentially aligned with the spatial patterning of sex-chromosome gene expression—which points toward a potential role of sex-linked genes in the establishment of maintenance of regional GMV sex differences. These studies emphasize the need for integrative models that view biological contribution to sex-biased brain development as a developmental dance of coordinated influences from both gonads and sex chromosomes.

### Caveats and Critiques Relating to Neuroimaging of Brain Sex Differences

While several sMRI studies apparently establish that there are highly reproducible male-female differences in regional gray matter volume after controlling for variation in total brain size in humans, this conclusion should be considered in the light of several important caveats and critiques to avoid misinterpretation. First, all sMRI phenotypes that show reproducible and statistically significant sex differences also show a considerable overlap between men and women. This overlap is illustrated by total brain volume: total brain volume averages 10% greater in men than women, but many women have a total brain volume above the 30<sup>th</sup> centile for male brain volume, and many men have a total brain volume below the 30<sup>th</sup> centile for female brain volume (149). Sex differences in brain structure and organization are present across the lifespan and vary based on age, so inferences should be drawn cautiously. Thus, while total brain size shows a robust mean difference between men and women, an individual's total brain volume is a weak predictor of biological sex. These 2 facts arise because biological sex is only one source of variation in brain size (149), and other factors/variables that influence total brain size are unknown and/or hard to model statistically (Fig. 1). By extension, because sources of anatomical variation can differ between brain regions—the same individual can have GMV values that appear to be “sex-typical” in one region, but “sex-atypical” in another (when typical and atypical are defined by an individual's percentile position relative to the distribution of population-level trait variation in each sex) (213). This interpretation offers one

potential explanation for the observation that an individual brain can show varying degrees of GMV “sex-typicality” in different brain regions (relative to the population distribution). Alternative explanations have been proposed, including regional variations in programs of sex-biased development such that one individual’s brain may be considered a “mosaic” of male and female parts regardless of their chromosomal and/or gonadal sex (213).

Second, although sex differences in regional GMV are highly reproducible in humans and mice, these meso-anatomical sex differences *cannot* be assumed to correlate with behavioral sex differences. The functional relevance of neuroanatomical sex differences is hard to establish experimentally in humans, but correlations between anatomical and behavioral sex differences could be modeled in humans using several feasible study designs. To date, however, very few studies have directly tested for such structure-function correlations in humans (161), and this is an important priority area for future research. Several other challenges will need to be addressed in future work for any given sex-biased sMRI phenotype, including which aspects of behavior to measure and how to consider properly all possible configurations of brain-behavior association in 2 groups (eg, varying intercepts and/or regression slopes across groups). Moreover, some sex-biased sMRI phenotypes, such as trajectories of anatomical change, can only be estimated from group-level data, which complicates comparisons with interindividual variation in behavior. More fundamentally, however, regional GMV sex differences may be useful for understanding the brain basis for sex-biased behavior without GMV variation itself being the behaviorally relevant marker. For example, sex differences in mean regional GMV may help to define brain circuits that subserve sex-biased behaviors through their molecular, cellular, or connectivity features rather than through their volume *per se*. It is also important to entertain the possibility that sex differences in the anatomical organization of a given brain system may actually serve to equilibrate function between the sexes despite each sex having a categorically different genetic starting point.

Third, in addition to the functional considerations above, full understanding of a given sex bias in regional brain anatomy requires a mechanistic account that can link observed anatomical sex differences back to specific genetic and/or environmental factors that differ between men and women. It is usually impossible to disentangle biological sex differences from those which could be the result of environmental influences during development, differences in gender, and in sexual orientation

(Fig. 1). Strict causal tests for mechanistic models of sex-biased brain development are very hard to achieve in humans, although several informative approaches have been pursued including: (i) modeling sMRI data using normative variation in hypothalamic-pituitary-gonadal axis maturation or function (214); (ii) applying sMRI methods to cohorts undergoing gender-reassignment (215); and (iii) studying how sMRI features differ between typically developing groups and those affected by medical disorders involving the sex chromosomes (eg, sex chromosome aneuploidies) or sex steroids (eg, androgen insensitivity, congenital adrenal hyperplasia) (215, 216). However, the opportunistic and correlational nature of these approaches places considerable limits on the inferential power of mechanistic studies of human sex-biased brain development. Moreover, as challenging as it is to study chromosomal or gonadal factors in humans, it is even harder to address empirically the many plausible hypotheses about the potential for experiential and societal influences to differentially shape brain development in both sexes (121) or genders.

### Section III

#### Sex Differences in Molecular Mechanisms Underlying Brain-Gut Disorders

The brain and the gut communicate with each other in a bidirectional way through parallel and interacting channels, involving immune, endocrine, and neural signaling mechanisms (217). The brain is able to modulate gut permeability, motility, intestinal transit, and microbial function via the autonomic nervous system (217), and the gut in turn sends signals to the brain to modulate behavior, in rodents (218). This brain-gut communication is especially critical in mediating stress responses and in stress-based disorders. In psychiatric and other neurological diseases, there are notable sex differences that point to different underlying neurobiological mechanisms in men vs women (219–221). Despite their clear documentation, these sex differences have largely been ignored, in order to develop broadly applicable pharmacotherapies that come at a considerable cost, especially for women’s health (222, 223). Sex biases in psychiatric risk are particularly instructive as they are developmentally patterned in a manner that is highly reproducible across different cultural settings and historical epochs: early-onset neurodevelopmental and gut disorders are more prevalent in boys than girls, while the opposite sex-bias is seen for adolescent-emergent mood disorders (134, 224). Brain-gut disorders are more prevalent in women than men, but this may be due to underreporting by men due to social stigma associated with several of these



disorders. The etiologies and risk factors for several brain-gut disorders differ between the sexes, yet study designs include predominantly male sex. In this section, we discuss the possibilities that shared and distinct mechanisms operate in males and females resulting in similar as well as distinct manifestation of symptoms for a given disease/disorder.

### Sex-Related Differences in Obesity

Although prevalence rates for obesity are at unprecedented levels in all ages (225) and are almost equal in men and women (except when stratified by race or ethnicity) (226), recent surveys indicate an increase in the incidence of obesity in adults and sex differences in the associations between weight, physical health, and psychosocial functions (227, 228). Sex differences in body fat distribution have also been observed (178, 229), with women showing an increased propensity to gain total body fat, especially subcutaneous abdominal fat, whereas men tend to have more visceral adipose fat (230), which is associated with higher risks of type 2 diabetes, hypertension, dyslipidemia, and cardiovascular disease (231). Most clinical trials do not report sex differences related to health outcomes or treatment responses, but a few existing reports suggest women are less likely to complete treatment, tend to lose less weight than men, have a greater number of unsuccessful attempts to maintain weight loss resulting in the well-known “yoyo” diet phenomenon, and have limited responses to pharmacological treatments (225). Obesity-related studies in humans and rodents have expanded in scope to not only focus on structural and functional brain differences between obese and lean male and females, but also include investigations into the bidirectional signaling associated with the brain-gut microbiome axis (232, 233). In obese individuals, changes in the relative abundance and gut microbial diversity have been linked to changes in metabolism, insulin resistance, inflammation, and fat deposition (234). The importance of the intestinal microbiome to human health has been of interest over the past few decades, with multiple studies now linking the microbiome to energy homeostasis, immune function, and development of obesity and metabolic syndrome (235–237), even though few studies have addressed causality.

Not only does the brain-gut axis demonstrate changes in obese individuals, but evidence also highlights differences in the microbiota based on sex hormones (238). More recently, the effect of sex hormones on the composition of the gut microbiota has been explored, with differences seen in the microbiota between men and women during various stages of human development and maturation (238). These

sexually dimorphic microbiome signatures are likely to contribute to differences in susceptibility to autoimmune and metabolic diseases between the sexes. Studies performed in immunocompromised mouse models have shown delayed onset and lessened severity of type 1 diabetes in female mice who receive male microbiota transplants; testosterone activity and androgen receptor signaling was essential for this protection (239, 240).

These sex-specific differences in the microbial communities persist throughout adult development, with murine models demonstrating the role of testosterone in orchestrating these divergences in host selection of microbial communities (240). In rodents, males exhibit lower microbiome variability relative to females, likely due to the pulsatile nature of estrogens (240). Human studies comparing the microbiome of twins also revealed more divergences in microbial composition in opposite-sex versus same-sex twins (241). When the cecal contents from adult male mice is transferred into female mice, metabolomic profile changes and masculinization of the hormonal profile results, suggesting the gut microbiota’s influence on sex-specific metabolic and behavioral phenotypes (239, 242).

Circulating estrogens in the body are metabolized by the liver and undergo methylation, hydroxylation, and conjugation reactions to produce metabolites that affect host metabolism (243). Certain metabolites are excreted through the bile and are further processed by microbial enzymes in the distal small and large intestine. Certain microbial species secrete beta-glucuronidase, an enzyme that deconjugates biliary estrogen metabolites and allows for its reabsorption into the bloodstream to act on distal sites through binding of estrogen receptors (244). Dysbiosis and decreased microbial diversity result in decreased production of absorbable estrogen metabolites. This mechanism has been implicated in pathologies associated with low circulating estrogens, such as obesity, metabolic syndrome, cardiovascular disease, and cognitive decline in women (245, 246); however, estrogen replacement therapy does not reverse these conditions (247). Growth hormone similarly contributes to sexually dimorphic responses in the above-mentioned diseases (248). In addition, estrogens modulate inflammatory pathways driving disease processes such as nonalcoholic fatty liver disease (NAFLD) and type 2 diabetes (249, 250). More specifically, estrogens regulate adipokines and lipopolysaccharides, which respectively are adipocyte-derived hormones and endotoxins that have been associated with type 2 diabetes (251). Adipokines play a role in metabolic homeostasis as well as in mediating the beneficial and detrimental effects of inflammation (252). The androgen- and estrogen-dependent regulation of adipokines, including leptin, resistin, adiponectin, and visfatin, provides a possible mechanistic link between metabolic disorders (obesity,



atherosclerosis, insulin resistance) and autoimmune dysfunction. The estrogen-microbiome axis can provide a potential avenue for a sex-specific approach to combating metabolic disorders and highlights the bidirectional interaction of estrogens and microbial communities in the pathogenesis of disease processes.

Although the exact signaling mechanisms underlying the communication within the brain-gut-microbiome axis remain incompletely understood, tryptophan metabolites have been implicated as important signaling molecules (253). The most extensively studied tryptophan metabolite is serotonin (5-HT), a molecule with diverse roles in both the gastrointestinal tract (ie, peristalsis, secretion, and absorption) and the central nervous system (ie, mood, pain modulation, behavior, sleep, and ingestive and cognitive functions) (254). Tryptophan also acts as a precursor to the kynurenine (KYN) family of molecules (255). In obesity, the KYN pathway is preferentially activated and may contribute to immune-mediated inflammation, which may drive inflammation-associated changes to the extended reward network described in previous brain studies, particularly changes involving the amygdala and lateral orbitofrontal cortex (256-259). KYN may also modulate signaling within the brain-gut-microbiome axis through downstream neuroactive metabolites, such as kynurenic acid and quinolinic acid, functioning as N-methyl-D-aspartate (NMDA) antagonists and NMDA excitotoxins, respectively (260). Sex differences have been reported in these metabolite products in obese individuals, with lower tryptophan levels but elevated KYN and KYN/tryptophan ratios in women with high BMI compared to men with high BMI (256, 261, 262).

### Sex Differences in Stress-Based (Patho) Physiologies

Epidemiological data reveal that the majority of psychiatric disorders occur at different rates in men and women. For example, men are more likely to suffer from attention-deficit/hyperactivity disorder (ADHD), whereas women are more likely to suffer from major depression and posttraumatic stress disorder (PTSD) (219, 263-265). Even when the rates of disorders are similar, their presentations can differ. Schizophrenia, for example, is only slightly more common in men than women, but men develop schizophrenia at an earlier age and present with more negative symptoms, such as social withdrawal and lack of motivation. (224). In the case of bipolar disorder, rates are similar between the sexes, but women more often have more rapid cycling and mixed episodes and they report higher comorbidity with eating disorders and PTSD, whereas men report higher comorbidity with alcoholism (266). Not only does the risk

and presentation of psychiatric disorders vary between men and women, but there are differences in treatment responses. For example, the efficacy of antidepressants differs between the sexes: men respond better to tricyclic antidepressants, whereas women respond better to selective serotonin reuptake inhibitors (267, 268). These findings implicate neurobiological sex differences in contributing to disease. In support of this idea, recent studies using animal models are beginning to uncover molecular processes that can bias males and females toward different pathology. Findings from some of these basic research studies will be highlighted here as examples of how including sex as a biological variable can inform our understanding of the etiology of stress-based disorders, as well as guide the development of better treatments.

While there are sex differences in rodent studies in the structure and the size of certain brain regions that can contribute to sex differences in behavior (211), imaging studies that focused on sex differences in cortical thickness and gyration suggest a role for these brain regions in humans as well. In adolescent girls, cortical thinning in the right temporal regions, the left temporoparietal junction and the left orbitofrontal cortex is faster than in boys (154). In contrast, changes in cortical folding were only found in one cluster of the right prefrontal region, suggesting that the mechanisms underlying changes in cortical thickness and gyrification in adolescents are distinct. Sexual dimorphism in the developmental course of the cortical maturation, which coincides with the onset of puberty, might explain sex differences in the age of onset and clinical presentation of many psychiatric disorders (154). Recent evidence has revealed that molecular sex differences in the brain are more widespread than initially thought and such seemingly small-scale differences can have a large impact on physiology and behavior (269). Neurons typically communicate with each other via neurotransmitters and neuropeptides, which are released from a presynaptic neuron and travel across a synapse to bind to receptors on the postsynaptic neuron to exert downstream cellular effects. There are sex differences in production and release of many neurotransmitters and neuropeptides that can result in behavioral changes. In other instances, sex differences in these systems are compensatory, leading to similar behavior endpoints via different mechanisms. For example, both male and female juvenile rats play, but the release of the inhibitory neurotransmitter gamma-aminobutyric acid (GABA) into the lateral septum mediates juvenile play only in female rats (270). There are also sex differences in receptors that can influence how these neurochemicals affect their downstream targets. For instance, dopamine 1 (D1) receptors, which belong to the family of G protein-coupled receptors (GPCRs), in the nucleus accumbens, are necessary for social

withdrawal in female but not male California mice (271). The function of GPCRs is often complex and they can induce different downstream effects depending on their conformation and location. Sex differences can occur at each level of receptor function, in some cases altering physiology differently in male vs female rodents. Sex differences in GPCR signaling are particularly important to consider, especially given that GPCRs are the most studied drug target family for a myriad of indications; in fact, 34% of all US Food and Drug Administration (FDA)-approved drugs are targets of GPCRs (272). As an example of the myriad of sex differences that can be mediated by receptors, we will use the corticotropin-releasing factor 1 and 2 (CRF<sub>1</sub> and CRF<sub>2</sub>, respectively) receptors that facilitate responses to stress, exhibit sexually dimorphic expression pattern, are modulated by both estrogens and androgens, and have been relatively well characterized in both sexes (273, 274).

Upon perception of stress or perturbation of homeostasis, CRF is synthesized in the paraventricular nucleus and released from the median eminence of the hypothalamus into the pituitary portal circulation, which in turn stimulates the synthesis and secretion of adrenocorticotrophic hormone (ACTH) from the anterior pituitary into the general circulation. ACTH acts on the adrenal cortex to stimulate the synthesis and release of glucocorticoids and other steroids. This activation of the HPA axis in the classic “flight or fight” response by the CRF system is present in all mammals. The mammalian CRF family comprises 4 agonists, CRF and 3 urocortins (UCN1-3); and 2 known class B GPCRs, CRF<sub>1</sub> and CRF<sub>2</sub>. While CRF<sub>1</sub> and CRF<sub>2</sub> share ~68% identity at the amino acid level (275), they perform distinct functions; CRF binding to CRF<sub>1</sub> initiates stress responses by activating the HPA axis, whereas UCN1-3 binding to CRF<sub>2</sub> brings systems back to homeostasis (274). Not surprisingly, perturbations in the components of the CRF family impact several organs and lead to brain-gut disorders, type 2 diabetes, metabolic syndrome, cardiovascular, and reproductive diseases, among others (274). There are sex differences in CRF’s endocrine effects. In female rats, higher levels of CRF mRNA in the paraventricular nucleus are reported that associate with the estrous cycle (276, 277) and are reviewed elsewhere (274). Perhaps as a compensatory response, CRF binding protein, an endogenous protein that sequesters CRF thus preventing its bioavailability, is expressed at higher levels in the pituitary of female compared with male mice (278). In humans, there is evidence for increased CRF receptor sensitivity at the level of the pituitary of women relative to men, because peripherally administered CRF, which acts at the pituitary, increases ACTH to a greater degree in women (279).

During stress, CRF is also released centrally into many brain regions, where its neuromodulatory effects coordinate cognitive and behavioral changes to promote stress coping (280). There are sex differences in the way these brain regions respond to CRF that are largely due to sex differences in CRF receptor signaling (274). For example, there is greater CRF<sub>1</sub> receptor binding in the basolateral amygdala in female rats (281). In contrast, binding of the CRF<sub>2</sub> receptor subtype, which is involved in stress recovery, is greater in the central nucleus of the amygdala in male rats (281). It is unknown precisely how these sex differences affect behavior, but given that the amygdala is critically involved in fear, it is likely that these receptor sex differences differently alter fear processing in males and females. In the brain, CRF<sub>2</sub> is most abundant in the bed nucleus of the stria terminalis, a region that regulates sexual behavior and stress-related functions (282, 283). Promoters in genes for CRF<sub>1</sub> and CRF<sub>2</sub> receptors harbor estrogen and androgen responsive elements and show tissue-specific modulation by sex hormones (284, 285). The sexually dimorphic expression pattern of these receptors at normal physiological states and during stress or disease pathology are summarized in a recent review (274).

Sex differences in CRF<sub>1</sub> receptor signaling have been identified in the noradrenergic-containing nucleus of the locus coeruleus (LC) and these differences have important implications for understanding disease vulnerability (273). The LC-noradrenergic system regulates levels of arousal such that higher levels of norepinephrin are associated with greater levels of arousal (286-289). Stressor exposure causes CRF to be released into the LC, which speeds up LC neuronal firing, increasing norepinephrin release (290, 291). Activation of this system during an acute or moderate stressor is thought to be adaptive, because it is important to be alert during a stressful event. However, if this system is activated inappropriately or persistently it can lead to hyperarousal that contributes to agitation, restlessness, impaired concentration, and sleep disturbance. Hyperarousal is a key feature of PTSD and reported in a subset of depressed patients (292, 293). Similar sex differences in spatiotemporal expression of CRF<sub>2</sub> and its ligands are found in humans with gut disorders, where they could contribute to differences between males and females in vulnerability to brain-gut disorders (127, 294).

There are sex differences in CRF<sub>1</sub> receptor signaling in the LC that increase female sensitivity to CRF. In the LC, CRF receptors primarily couple to Gs to initiate signaling through the cyclic adenosine monophosphate (cAMP)-protein kinase A (PKA) signaling pathway (295-297). Sex differences in CRF<sub>1</sub>-induced cAMP-PKA signaling are linked to greater coupling of the CRF<sub>1</sub> receptor to Gs in females compared to males (298). This sex difference in

coupling of Gs may indicate that the CRF<sub>1</sub> receptor has a different conformation or binding partner in females vs. males, permitting different proteins to preferentially bind in each sex. Further support for this idea comes from studies demonstrating that, in male rats, acute swim stress increases the binding of a different protein,  $\beta$ -arrestin2, to the CRF<sub>1</sub> receptor, and this effect is not observed in female rats (298). The increased  $\beta$ -arrestin2 in male rats likely contributes to the greater CRF<sub>1</sub> receptor internalization in stressed males (298). When taken together, these findings suggest that CRF<sub>1</sub> receptors preferentially signal through different pathways in males (small GTPases) and females (cAMP-PKA) (299). This difference in signaling could alter physiology and disease risk. In fact, sex differences in CRF<sub>1</sub> receptor signaling in cortex were linked to increased Alzheimer-related pathology, including increased tau phosphorylation and amyloid  $\beta$  signaling in female compared with male mice (300). Few studies investigate sex differences in GPCR signaling, but it is likely that sex differences in GPCRs are also found in receptors other than CRF and that these differences could confer vulnerability and resilience to many diseases.

In human studies, single nucleotide polymorphisms in the CRF receptor gene (*CRHR2*) are associated with negative emotions in patients with irritable bowel syndrome (IBS) (301). Immune cells secrete CRF<sub>2</sub> in extracellular vesicles that circulate in the plasma and associate negatively with disease severity scores in IBS-diarrhea patients (294). Single nucleotide polymorphisms in *CRHR2* are also associated with lifetime PTSD in women (302) and with type 2 diabetes (303). The prevalence of type 2 diabetes and insulin resistance is greater in men (304). Epidemiological studies have shown that men with high levels of self-reported perceived stress have a 1.4 higher odds ratio of developing type 2 diabetes during a 10-year follow-up period and are at 2-fold higher risk of developing diabetes than women with similar levels of reported stress (305). In agreement with human data, male mice lacking functional stress receptors (*Crhr2*<sup>-/-</sup>) and haploinsufficient (*Crhr2*<sup>+/-</sup>) mice have worse glucose and insulin tolerance, microvesicular hepatic steatosis, and dyslipidemia than female *Crhr2*<sup>-/-</sup> or C57BL/6 male and female mice in a high-fat diet-induced model of diabetes (129). Female *Crhr2*<sup>-/-</sup> mice had significantly greater brown adipose fat mass on high-fat diet than C57BL/6 female or male mice of either genotype, suggesting greater thermogenic responses that might be protective. However, the mouse study did not address whether steroid hormones contributed to changes in adipose mass or function. Thermogenesis in brown adipose tissue in humans in response to a meal or cold stress suggests that women have greater thermogenic responses

than men and that these responses correlate positively with progesterone levels, but negatively with cortisol levels (306). Thus, analyzing data from both sexes provides insights into sex-specific mechanisms that regulate physiological processes in both sexes.

In colonic tissues of pediatric patients with Crohn's disease, subcellular localization of CRF<sub>2</sub> differs between boys and girls (127). Furthermore, lack of CRF<sub>2</sub> revealed several sex-specific signaling pathways and differential degree of inflammatory responses in male and female mice (127). Treatment with UCN1, a high-affinity agonist for both CRF receptors, rescued *Crhr2*<sup>-/-</sup> male mice from colitis-induced mortality, whereas UCN1 treatment increased mortality in *Crhr2*<sup>-/-</sup> female mice (127). Both diabetes and Crohn's disease show sex differences in disease prevalence and outcomes, yet most animal studies use male sex to delineate mechanisms. Analysis of the data by segregating the 2 sexes can reveal significant insights into distinct and shared mechanisms and factors that exist at baseline and during disease. For example, sex differences exist in the etiology of pancreatitis: alcohol and tobacco predominate in men, whereas idiopathic and obstructive etiologies predominate in women (307), yet to date only a few studies have used both sexes to study mechanisms involved in pancreatitis. While both males and females develop pancreatitis in animal models, when administered identical doses of the pancreatic stressor caerulein, C57BL/6 female mice show less severe pancreatitis and histological damage than male mice (128). Lack of CRF<sub>2</sub> rendered female mice more susceptible to caerulein-induced pancreatitis compared with male *Crhr2*<sup>-/-</sup> mice (128), with both male and female *Crhr2*<sup>-/-</sup> mice exhibiting similar levels of total histological damage (128). Detailed analysis of components contributing to histopathological damage showed that female C57BL/6J mice have less necrosis, zymogen granules, and vacuolization than male mice with pancreatitis, but they have similar levels of edema and neutrophil infiltration as male mice (128). This data segregation allowed isolation of factors that differentially contribute to histological damage, which otherwise would be lost, if grouped together in this analysis. Taken together, these data support a role for the CRF receptors, product of an autosomal gene and regulated by steroid hormones to bring about sex-specific cellular signaling and function.

### Sex Differences in Pharmacotherapy of Stress-Based Diseases

Sex differences in GPCR signaling are also relevant for pharmacology. Biased ligands can shift signaling toward

$\beta$ -arrestin pathways and away from G-protein-mediated pathways based on how they bind to the GPCR (308). These biased ligands are being designed with the hope of providing more targeted therapies with fewer side effects (308, 309). Understanding sex differences in signaling and how such differences contribute to changes in physiology can inform the development of these biased ligands. For example, a CRF<sub>1</sub> receptor ligand that biases signaling through  $\beta$ -arrestin pathways may be useful for treating hyperarousal symptoms or reducing the progression of Alzheimer disease, especially in women. An idea for such a compound would never have come about if women were excluded from preclinical and clinical studies on CRF<sub>1</sub> receptor function.

The idea of using CRF<sub>1</sub> antagonists to treat depression, PTSD, and irritable bowel syndrome has been around for decades, but these compounds were ineffective in several clinical trials (222, 310). Sex differences in CRF<sub>1</sub> and CRF<sub>2</sub> receptor signaling may also explain the failure of different selective CRF<sub>1</sub> antagonists as treatments for these disorders. While there are likely many reasons for their failure, critical ones could be sex differences in their target, association of CRF receptors with different binding partners in female versus male cells, or heteromerization of CRF receptors (311-313), all of which can result in altered signaling. The consistent efficacy of CRF<sub>1</sub> antagonists in reducing anxiety-like and depressive-like behavior in rodents and nonhuman primates was established in studies primarily conducted in male animals (222, 314-317). In a study in which females were included, local blockade of CRF<sub>1</sub> receptors in the dorsal raphe with an antagonist reduced anxiety in male but not female mice, highlighting sex differences in efficacy (318). Yet these compounds developed primarily in male rodents were tested in clinical trials with participants of both sexes or only in women. Notably the only CRF<sub>1</sub> antagonist study that had success in reducing depressive symptoms, NBI-34041, was conducted only in men (222, 319). The approach of developing compounds in male animal models is not unique to CRF<sub>1</sub> antagonists and has been common practice (222). Collectively, these studies suggest that a failure of certain therapeutics may result from ignoring sex differences in their targets. Sex differences in targets are not well known because most preclinical studies use only male rodents (320, 321). Excluding females in the drug development stage particularly impacts women's health. Indeed, it is likely that some compounds deemed ineffective in male rodents would work in females, yet such compounds never would have a chance to make it to market, because of testing exclusively in male subjects. Moreover, the fact that most

drugs are designed using males also likely contributes to the higher rates of adverse drug reactions in women compared to men (322).

Including both sexes in mechanistic studies is critical for developing drugs that work efficaciously in both sexes (see Box 4). Latent sex differences can also impact drug development: a compound targeting a mechanism in men may not work in women. As the field moves forward, we may find that sex-specific therapeutics based on understanding latent sex differences are required to truly improve patient outcomes. In sum, there are observable sex differences in behavior that extend beyond reproductive function. Molecular sex differences in several organs, such as the gut and the central nervous system, play a key role in driving these functional and behavioral differences. Moreover, even when function and behavior are consistent between the sexes, the underlying processes can differ. Thus, including both sexes in preclinical molecular studies guiding drug development is key for improving the health of men and women.

## Section IV

### Sex Differences in the Cardiovascular-Renal System

Cardiovascular disease (CVD) is the major cause of premature death in both sexes worldwide, although women generally develop CVD 10 years later than men (328). In 2016, ~18 million people died from CVD, representing ~30% of all deaths worldwide (329). There are marked sex differences in CVD and renal disease. For example, women are protected from heart disease during the reproductive years but are more likely to die in the first year following a cardiovascular event than males (330). Most heart conditions, including myocardial infarction, Takotsubo syndrome, and cardiac arrhythmia, exhibit sex differences in symptoms and severity (331). Chronic kidney disease (CKD) is more prevalent in women but, once established, progresses more rapidly in men (332). However, this female advantage is lost after menopause. These sex differences in cardiovascular and renal disease have long been overlooked and underappreciated. The clinical presentation, the response to pharmacotherapies, standard care practices, and the underlying pathophysiological mechanisms differ in women compared to men. Furthermore, lack of understanding of sex differences in mechanisms underpinning cardiovascular and renal disease has led to poorer outcomes in women than in men. A major problem is that mechanistic preclinical studies in animal models have largely been conducted in males (333). Yet, it has become increasingly clear that sex differences



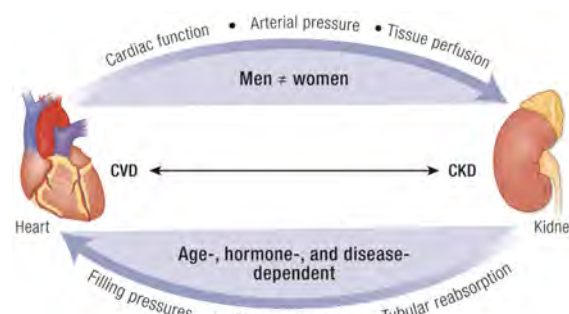
**Box 4.** Sex differences in pharmacokinetics and pharmacodynamics of drugs

Thalidomide, a sedative that was prescribed to many pregnant women to relieve pregnancy-associated nausea, was first sold in Germany (without a prescription) in 1957; it had been tested in animals and in men, but not in women. It was soon noted to cause multiple birth defects, most notably phocomelia (arrested limb development) and postnatal deaths. Fortunately, it was never approved in the United States, but thousands of children were affected around the world. In 1962, the US Congress passed the Kefauver-Harris Drug Amendments Act requiring manufacturers to prove a drug is both safe and effective (323). Consequently, the US Food and Drug Administration (FDA) recommended against drug testing on women, particularly those of child-bearing age, until the early 1990s. To date, most treatment guidelines are based on results from clinical trials conducted on middle-aged men. Dosage, pharmacokinetics, and pharmacodynamics data for women (and children) are lacking for most drugs. Activities of cytochrome P450 (CYP) enzymes show significant sex differences in drug metabolism in Phase I clinical trials (324). Gastric enzymes involved in oxidative degradation such as alcohol and aldehyde dehydrogenases are significantly more active in men than in women resulting in higher bioavailability of ethanol in women versus men. In Phase II trials, glucuronidating enzymes and some efflux transporters have been shown to be more active in men than in women. Together with estrogens and androgen that alter transmembrane transporters, these processes contribute to efficacy of metabolism in both Phase I and II. Drugs used for treatment of cardiovascular disease, such as angiotensin-converting enzyme inhibitors (ACE inhibitors), angiotensin II receptor blockers, diuretics, the aldosterone blocker eplerenone, antiplatelet agents, and oral antithrombotic medications, all show sex differences in efficacy and safety (325, 326). Over-the-counter nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen and naproxen are more effective in men than women; there is more liver toxicity with acetaminophen use in women, whereas opioids and benzodiazepine work better in women. While some sex differences in metabolic clearance for statins and beta-blockers are known for these frequently prescribed drugs, dosing and adverse event monitoring in routine clinical practice is inadequate. Alogsetron, a serotonin receptor 3 antagonist, is approved for treatment of severe irritable bowel syndrome–diarrhea symptoms in women, as it is largely ineffective in men (327). These findings emphasize that women and men take divergent routes (molecular mechanisms and signaling pathways) to reach the same destination (normal function or diseased state), with paths often intersecting. In the era of personalized medicine, there is no one-size-fits-all therapy, and considering sex-specific outcomes in pharmacokinetics and pharmacodynamics of drugs as well as clinical guidelines is warranted to ensure efficacy and safety of medications.

are apparent in all endocrine systems, which are modified by sex chromosomes and sex hormones, with temporal actions across the lifespan.

### Blood Pressure Links Cardiovascular and Renal Diseases

Cardiovascular and renal diseases are linked by the relationship of each to arterial pressure (Fig. 5). The cardiovascular system determines arterial pressure, with the heart generating cardiac output and the blood vessels determining total peripheral resistance. The kidneys contribute by regulating extracellular and intravascular fluid volume, and hence blood volume, and venous return. It is established that CVD leads to chronic kidney disease (CKD) and that CKD leads to the development of CVD. For example, following a myocardial infarct, cardiac output declines and arterial pressure falls causing the kidney to vasoconstrict and retain extracellular fluid, with the effect to increase venous return and normalize cardiac output. However, this has the unwanted effect of placing further stress on the failing heart. Conversely, kidney failure causes fluid retention and hypertension (334). Thus, cardiovascular and kidney function are intertwined, as are the endocrine systems that regulate organ function; including the renin-angiotensin-aldosterone system



**Figure 5.** Heart and kidney functions are linked. Sex differences exist in many aspects of heart and kidney function at baseline and in CVD and CKD, as shown. Both organs feed-forward and influence each other's function. Genes, hormones, and age are some known factors that modulate this relationship in a sex-specific manner. Abbreviations: CKD, chronic kidney disease; CVD, cardiovascular disease.

(RAAS), the endothelin system, atrial natriuretic peptides, vasopressin, and glucocorticoid and mineralocorticoid hormones. There is an increasing recognition that there are fundamental sex differences in each of these systems. For example, aldosterone contributes to obesity-induced CVD with a greater impact in females than males (335). However, further research is required to fully elucidate the sex differences present in each endocrine system and how these impact disease development and progression.

## Sex Differences in Arterial Pressure and Hypertension

Hypertension is a major risk factor for cardiovascular and renal disease. Over the lifespan there are age- and sex-related differences in arterial pressure. The majority of the data are derived from cross-sectional studies, but a few powerful studies have tracked arterial pressure over decades within a population (332, 336-339). Arterial pressure increases in both men and women with age, although the slope of the relationship is different between men and women. Sex differences in arterial pressure emerge during adolescence and are maintained throughout adulthood until women reach menopause (336, 337, 339). Arterial pressure is ~5 to 10 mmHg greater in men than age-matched women during the reproductive years (340-342). Postmenopause arterial pressure rises steeply in women regardless of race, ethnicity, or country of origin (340-342). One of the most striking characteristics of hypertension is that the prevalence and severity is lower in premenopausal women than in age-matched men. The prevalence of hypertension is ~10% in young premenopausal women, ~50% in postmenopausal women and by the age of 75 years almost ~80% of women are hypertensive (342-344).

Nonhuman mammalian species also display sex differences in arterial pressure. Arterial pressure in adult females is lower in normotensive dogs, sheep, rabbits, rats, and mice as compared with adult males (338, 345). Furthermore, in rodents, rabbits, and sheep, females of reproductive age are protected against the development of hypertension, such that arterial pressure increases significantly less in females than in males, in settings of disease (338). Thus, sex differences are present in the pathophysiology of cardiovascular and renal diseases. Yet, the mechanisms underlying the sexual dimorphism of arterial pressure in men and women as they age are poorly understood. However, extensive evidence indicates that sex hormones likely contribute to the regulation of arterial pressure through their actions on endocrine systems.

## Sex Differences in Endocrine Control of Arterial Pressure and Kidney Function

There are subtle differences in most endocrine actions between men and women. It is not the maximal response of each system but rather the slope of the response that is altered. In this manner, a system responds maximally in a hemodynamic crisis (eg, hemorrhage) but in a sex-specific manner to lesser challenges. For example, a greater dose of the vasoconstrictor angiotensin II is required to increase arterial pressure in female than male mice (346). Consistent with this finding, the same dose of angiotensin II caused a

greater reduction in renal blood flow in men than women, with the suggestion that this was an angiotensin type 2 receptor ( $AT_2R$ ) mediated effect (347). In rodents, females of reproductive age have a greater  $AT_2R$  to angiotensin type 1 receptor ( $AT_1R$ ) ratio than males, which contributes to the reduced pressor response to angiotensin II (348). This has been indirectly demonstrated in women, in studies examining forearm vascular resistance responses to  $AT_2R$  blockade (349). The  $AT_2R$  also mediates a leftward shift in the pressure natriuresis-diuresis relationship, an effect that is greater in female than male mice (350). In women, indirect evidence also indicates a more pronounced role for the  $AT_2R$  in the regulation of renal blood flow responses to angiotensin II (347). This is linked to differential expression of components of the RAAS in males and females, which have been demonstrated in most mammalian species, including humans (351). In the context of the above example, estrogen interacts with the glucocorticoid response element on the X-linked *AGTR2* gene, to increase  $AT_2R$  expression in females (352). In addition, there are sex differences in human aminopeptidase A, aminopeptidase N, and angiotensin-converting enzyme 2 levels, responsible for generation of the angiotensin peptide fragments, angiotensin III, and angiotensin-(1-7), which have a high affinity for the vasodilatory  $AT_2R$  and Mas receptors, respectively (353-356). Lastly, there are marked and important sex differences in the production and function of aldosterone, although this has only recently been started to be examined (335). Thus, in females the RAAS is balanced toward the protective depressor RAAS arm, which at the lower physiological range may prevent arterial pressure increasing to the same extent as in males. However, this delicate balance may be lost in women after menopause and in the situation of metabolic syndrome.

Other vasoconstrictor systems also have sexually dimorphic actions. Endothelin-1 causes vasoconstriction via the endothelin type A receptor ( $ET_AR$ ), and vasodilation and sodium excretion via the  $ET_BR$ . Testosterone increases  $ET_AR$  and estrogen increases  $ET_BR$  expression, which contributes to the differential control of arterial blood pressure and renal function between the sexes (357). Vasopressin, with important roles in circulatory and water homeostasis, is affected by age and sex. Urinary concentrating ability declines with age, but more steeply in women. Young men produce more concentrated urine than women, in part due to higher plasma arginine vasopressin levels and greater vasopressin type 2 receptor expression in the collecting ducts of the kidney in males (358, 359). Renal vasopressin type 2 receptor expression declines with age in association with a reduction in maximal urine concentrating ability (358, 359). Interestingly, aldosterone signaling via mineralocorticoid receptors is associated with increased CVD risk and is

enhanced in obese women (another example of how the RAAS is differentially modulated in females), which has been linked to leptin-induced endothelial dysfunction (360, 361). Moreover, evidence in rodents indicates that sodium reabsorption along the length of the renal tubule is sexually dimorphic, with reabsorption shifted to the later segments in females compared to males. This was associated with greater sodium epithelial channel expression, under the control of aldosterone, in the collecting duct, which could also contribute to the increased cardiovascular and renal risk associated with aldosterone in females (362). Finally, oxytocin, relaxin, and prolactin, which are traditionally known for their roles in pregnancy, have differential cardiovascular and renal actions in nonpregnant female and male rodents (348, 363, 364). Thus, evidence points to sex differences in endocrine control of extracellular fluid homeostasis and vascular function, which likely contribute to age- and sex-related disparities in renal and cardiovascular disease risk. Further studies are warranted to understand this complex issue more fully. In particular, it is important to take into account the subtle effects within the physiological range that counterbalance function of each hormonal system, rather than examine the impact of pharmacological doses which can mask sex differences in responses.

### Cardioprotective Mechanisms in Women Sustain a Healthy Pregnancy

The cardioprotective mechanisms that predominate in women during the reproductive years enable the extensive hemodynamic adaptations required to meet the metabolic demands of the developing fetus and a successful pregnancy. During a normotensive pregnancy, blood volume increases and cardiac output increase by ~30% to 50%, but arterial pressure declines due to marked peripheral vasodilatation (365, 366). The associated renal vasodilatation accommodates an increase in glomerular filtration rate to process the additional blood volume, but an increase in vasopressin type 2 receptor expression enables increased tubule reabsorption of sodium and water. However, in women with preeclampsia, a pregnancy-induced form of hypertension, these cardiovascular adaptations are perturbed. Accumulating evidence now indicates that women with a history of pregnancy-associated hypertension have a 2- to 5-fold increased risk of CVD in later life (367). Understanding the mechanisms underpinning this dysregulation of vascular function in pregnancy-related hypertension may lead to the identification of new therapeutic targets for the treatment of cardiovascular disease in both sexes. For example, relaxin, which is known best for its role in pregnancy but is also produced in males, plays

roles in the regulation of renal function, blood pressure, and tissue fibrosis (363). Thus, it is a mistake to assign hormonal systems a specific role as most have wide-ranging tissue-specific pleiotropic effects.

### Sex Hormones and Sex Chromosome Complement in CVD

Sex hormones contribute to sexual dimorphism in endocrine control of the cardiovascular system, with evidence suggesting that there is a “sweet spot” for both testosterone and estradiol, as unusually high or low levels of either promote disease (368-370). This has been the cause of apparent discrepancies in the literature. In particular, this remains a problem in animal studies in which the dose of estrogen used to study the impact of estrogen replacement in aged or gonadectomized models varies widely (~1000-fold), as does the route or length of administration; none of which accurately reflect the cyclic pattern of *in vivo* production. This lack of rigor into investigation of the effects of sex hormones in preclinical models likely contributes to the controversy that surrounds hormone replacement therapy for the prevention of CVD risk. Despite extensive evidence that hormone replacement therapy is cardioprotective, the negative results of the Women’s Health Initiative Trial effectively halted the use of hormone replacement therapy (371). Certainly, high-dose estrogen can increase blood pressure and cardiovascular risk in women (372). However, continued investigation supports the use of hormone replacement therapy in subsets of women, and further work in this area is required (373). In contrast, in men with low testosterone, beneficial cardiovascular effects are seen with testosterone replacement (374). In women with polycystic ovary syndrome, high testosterone levels are associated with elevated blood pressure (374). Dose-ranging studies are required to delineate these effects.

The sex chromosomes may have a direct impact on sex differences in the physiology and pathophysiology of the cardiovascular system and cardiovascular risk, independent of sex hormones. Human sex chromosome aneuploidies, such as Turner and Klinefelter syndromes, suggest that sex chromosome abnormalities can carry an increased risk of CVD. Women with Turner syndrome have around a 3-fold greater mortality and reduced life expectancy relative to the general population (375-377). CVD is a leading cause of increased mortality in Turner syndrome (375-377). Congenital cardiac anomalies, hypertension, coarctation of the aorta, diabetes, ischemic heart disease, and stroke are commonly associated with this condition (378). Similarly, men with Klinefelter syndrome have a high cardiovascular risk profile (379, 380), and an increased risk of

mortality from cardiovascular disease (381, 382). However, observations from studies in individuals with sex chromosome aneuploidies are complicated by confounding factors, including abnormal gonadal sex hormone levels associated with gonadal failure. Thus, it is very difficult to distinguish between hormonal versus genetic mechanisms and cardiovascular risk in these human conditions.

Experimental approaches, such as the FCG mouse model discussed in “Section I,” and Box 3 can discriminate between hormonal and sex chromosome effects in cardiovascular disease (115). Beyond genes on the sex chromosomes, there are sex differences in autosomal gene expression, which can be both organ or cell specific (383). In the kidney and the heart, hundreds of rat and human genes are regulated differently between the sexes (384–386). This disparate expression is triggered by sex hormones in ~30% of cases, with the other 70% linked to sex chromosome and microRNA dimorphisms (384, 385). For example, sex differences have been reported in the expression of nitric oxide synthase, tyrosine hydroxylase, and sodium channels in the rodent heart and kidney (332). However, few studies to date have compared gene expression and the effect on the proteome between the human sexes, and further studies are required.

### Sex Differences in Pharmacotherapy for Cardiovascular and Renal Disease

Men and women respond to disease differently: kidney diseases progress faster in men than women, kidney transplants from women to men tend to fail more frequently than the reverse, and the effects of diabetes on the kidney differ between the sexes (387–392). Furthermore, symptoms and mechanisms of heart failure differ between the sexes (393). This suggests that sex-specific treatments for CKD and CVD could be required. There is currently little evidence to suggest that men and women respond differently to current treatments for hypertension (394). In large part, this is because clinical trials have lacked statistical power to take this into account. It will be difficult to achieve such an outcome for drugs that have already received FDA approval. However, some treatments are more frequently prescribed, without any basis in evidence (395). There are also marked differences in pharmacokinetics and pharmacodynamics (see Box 4), leading to more frequent adverse drug reactions in women, related to differences in drug clearance and breakdown (396). Therefore, sex should be taken in account for new treatments seeking approval in the future. When women are considered, important and unexpected sex differences are observed in almost every aspect of cardiovascular and renal function in health and

disease. Further research is required to fully understand these differences, and in turn to guide the development of sex-specific treatment guidelines for CVD and CKD.

## Section V

### Challenges for the Future of Sex Differences Research—Areas Requiring Special Attention

Sex differences exist in anatomy, behavior, and physiology across the animal taxa. By extension, because of these innate differences, sex differences exist at molecular and cellular levels in mechanisms that underlie these processes. Despite concerted efforts by the Office of Research on Women's Health and the Organization for the Study of Sex Differences in educating researchers about the distinction between sex versus gender, the indiscriminate use of the word “gender” continues to pervade scientific literature. The sex of established cultured cell lines is another issue; in addition to aneuploidy, chromosomal numbers change as cells are passaged and are dependent upon the tissue of origin (397, 398), but this aspect is beyond the scope of this Statement. Not surprisingly, sex differences are seen in etiology, prevalence, and outcomes in a myriad of human diseases that range from psychological and autoimmune to gastrointestinal, cardiovascular, renal, and reproductive; SARS-CoV-2 causes more severe COVID-19 disease in men than in women despite similar infection rates (399–401). Besides genetic makeup (predisposition), extraneous factors, such as the socioeconomics, demographics, education level, profession, age, and the environment, greatly influence an individual's health; COVID-19 disease outcomes especially highlight the contribution of these extraneous factors in health disparities. Factors such as the endocrine-disruptive chemicals can disproportionately affect one sex over the other; regardless, whether favorable or adverse effects are present in one or both sexes, the effects would impact trans and cisgender persons, and hence these sex-specific effects should not be overlooked or underestimated (402). Some human studies addressing sex differences take these factors into account, whereas others are more selective. Many studies of disease pathways are sensitive to levels of gonadal steroid hormones, which contribute to sex differences. In human studies, unless gender information is explicitly collected or available, the study deals with biological sex, not gender. Use of sex and gender interchangeably deemphasizes the importance of studying gender as an independent variable.

In animals or experimental models of human diseases, effects of estrogens have been investigated more often than effects of progestins and androgens, which should



be corrected. Paradoxically, female sex is often excluded from experimental design on the basis that: (i) the estrus cycle will interfere with data interpretation; (ii) mechanisms that operate in the male sex will operate in the female sex and thus only need to be confirmed in females; (iii) metabolic demands are similar between the sexes; (iv) the X chromosome in males and females is subject to similar regulation; and (v) autosomal genes will be subject to equal variance between the sexes. The same studies often ignore the diurnal cycling nature of testosterone in males; testosterone levels in male rodents can show more day-to-day variability than estrogen and progesterone levels in females. Other steroid hormones, such as glucocorticoids, that show circadian rhythm and whose levels differ between the sexes also influence gene expression and function. In rodents but not primates, sex differences in secretion of growth hormone result in sexually dimorphic hepatic metabolism of drugs and xenobiotics (403). In rodents, endocrine disruption can have transgenerational effects on male and female reproductive systems (404). Since changes in hormone levels and gene expression are dynamic, can be localized, and are spatiotemporally distinct, no one study design or condition can be used as a gold standard. Animal housing and handling conditions can also create sex differences, and thus any experimental design and data interpretation should take these variables into account. If sex-segregated data does not differ for the aspects under study, then data can be pooled from the 2 sexes and reported accordingly.

Studies in animal models have just begun to uncover unequal effects of the sex chromosomes in XX vs XY cells, so we expect further discoveries about such effects in the future. Once genes that cause sex differences are discovered in animals, the findings generate new hypotheses and rationalize human studies to determine whether the same gene also creates sex differences in humans. That question can be studied by the methods of human genetics, relating genetic variation to disease incidence and outcome. Without the animal studies, however, it is difficult to understand detailed molecular mechanisms. It is also important to remember that no single rodent or animal model can capture the complexity of any human disease, but each model provides valuable insights into one or another major aspect of disease. If different etiologies of a given disease share mechanisms, then mimicking the precise conditions that initiate human disease may not be critical.

The study of sex chromosome effects is in its infancy and has focused on proving that sex chromosomes play a role and finding the genes responsible for the effects. So far there has been little effort to understand how these factors interact with steroid hormones to cause sex differences. If

both types of factors cause differences in disease incidence, are they affecting the same or different downstream pathways? Do their effects converge, or do they independently affect different mechanisms that each influence a complex disease? Do male-biased factors (hormones, Y-chromosome genes) act synergistically to induce a male-specific state, or do they counteract each other to reduce the difference between males and females (123, 405)? Are the diverse sex-biasing factors changing in their effects across the lifespan, leading to changes in the type or amount of sex difference at different ages?

When studying sex differences in animal models of human diseases, it is important to first understand and elucidate differences at baseline in gonadally intact animals. As pointed out earlier, steroidogenic enzymes are also present in nongonadal tissues, especially the brain, thus it is not entirely possible to eliminate effects of sex steroids from all tissues. Moreover, tamoxifen-inducible *Cre* recombinase used to routinely perform lineage tracing and gene inactivation studies in mice has its own problems (406, 407) that are largely ignored and can further confound sex-specific data analysis; tamoxifen antagonizes actions of estrogen receptor- $\beta$  and inhibits expression of over 70 genes (408), but the contribution of these tamoxifen-regulated genes on study results and outcomes is never accounted for and requires careful consideration. Before mechanisms behind sex differences in physiology and disease can be elucidated, a fundamental understanding of sex differences that exist at baseline, is needed.

## Acknowledgments

The authors thank Stephen M. Rosenthal and Robert M. Carey for critically reading the manuscript.

## Additional Information

**Correspondence:** Aditi Bhargava, PhD, Professor, Department of ObGyn and Center for Reproductive Sciences, 513 Parnassus Avenue, HSE1635, Box 0556, UCSE, San Francisco, CA 94143, USA. Email: [Aditi.bhargava@ucsf.edu](mailto:Aditi.bhargava@ucsf.edu)

**Disclosures:** The authors have nothing to disclose.

**Disclaimer Statement:** The Endocrine Society develops Scientific Statements to assist clinicians and researchers by providing guidance and recommendations for particular areas of practice. One should not consider this Scientific Statement inclusive of all proper approaches or methods, or exclusive of others. It cannot guarantee any specific outcome, nor does it establish a standard of care. It is not intended to dictate the treatment of a particular patient. Treatment decisions must be made based on the independent judgment of health care providers and each patient's individual circumstances. The Endocrine Society makes no warranty, express or implied, regarding this Scientific Statement and specifically excludes any warranties of merchantability and fitness for a particular use or purpose. The Society shall not be liable for direct, indirect, special, incidental, or consequential damages related to the use of the information contained herein.

## References

1. Baclawski K. The Observer Effect. *2018 IEEE Conference on Cognitive and Computational Aspects of Situation Management (CogSIMA)*. Boston, MA, 2018:83-89. doi:10.1109/COGSIMA.2018.8423983.
2. Garnjobst L, Wilson JF. Heterocaryosis and protoplasmic incompatibility in *Neurospora crassa*. *Proc Natl Acad Sci U S A*. 1956;42(9):613-618.
3. Hadjivasilou Z, Pomiankowski A. Evolution of asymmetric gamete signaling and suppressed recombination at the mating type locus. *Elife*. 2019;8:e48239.
4. Martin CL, Ruble DN. Patterns of gender development. *Annu Rev Psychol*. 2010;61:353-381.
5. van Anders SM, Goldey KL, Kuo PX. The steroid/peptide theory of social bonds: integrating testosterone and peptide responses for classifying social behavioral contexts. *Psychoneuroendocrinology*. 2011;36(9):1265-1275.
6. Ellegren H. Sex-chromosome evolution: recent progress and the influence of male and female heterogamety. *Nat Rev Genet*. 2011;12(3):157-166.
7. Matsubara K, Tarui H, Toriba M, et al. Evidence for different origin of sex chromosomes in snakes, birds, and mammals and step-wise differentiation of snake sex chromosomes. *Proc Natl Acad Sci U S A*. 2006;103(48):18190-18195.
8. Munday PL, Buston PM, Warner RR. Diversity and flexibility of sex-change strategies in animals. *Trends Ecol Evol*. 2006;21(2):89-95.
9. Todd EV, Ortega-Recalde O, Liu H, et al. Stress, novel sex genes, and epigenetic reprogramming orchestrate socially controlled sex change. *Sci Adv*. 2019;5:eaaw7006.
10. Matson CK, Murphy MW, Sarver AL, Griswold MD, Bardwell VJ, Zarkower D. DMRT1 prevents female reprogramming in the postnatal mammalian testis. *Nature*. 2011;476(7358):101-104.
11. Uhlenhaut NH, Jakob S, Anlag K, et al. Somatic sex reprogramming of adult ovaries to testes by FOXL2 ablation. *Cell*. 2009;139(6):1130-1142.
12. Berta P, Hawkins JR, Sinclair AH, et al. Genetic evidence equating SRY and the testis-determining factor. *Nature*. 1990;348(6300):448-450.
13. Sinclair AH, Berta P, Palmer MS, et al. A gene from the human sex-determining region encodes a protein with homology to a conserved DNA-binding motif. *Nature*. 1990;346(6281):240-244.
14. Fechner PY, Marcantonio SM, Jaswaney V, et al. The role of the sex-determining region Y gene in the etiology of 46,XX maleness. *J Clin Endocrinol Metab*. 1993;76(3):690-695.
15. Vorona E, Zitzmann M, Gromoll J, Schüring AN, Nieschlag E. Clinical, endocrinological, and epigenetic features of the 46,XX male syndrome, compared with 47,XXY Klinefelter patients. *J Clin Endocrinol Metab*. 2007;92(9):3458-3465.
16. Ludbrook LM, Harley VR. Sex determination: a 'window' of DAX1 activity. *Trends Endocrinol Metab*. 2004;15(3):116-121.
17. Arnold AP. A general theory of sexual differentiation. *J Neurosci Res*. 2017;95:291-300.
18. Spiller C, Koopman P, Bowles J. Sex determination in the mammalian germline. *Annu Rev Genet*. 2017;51:265-285.
19. Edson MA, Nagaraja AK, Matzuk MM. The mammalian ovary from genesis to revelation. *Endocr Rev*. 2009;30(6):624-712.
20. Eid W, Biason-Lauber A. Why boys will be boys and girls will be girls: human sex development and its defects. *Birth Defects Res C Embryo Today*. 2016;108(4):365-379.
21. Parma P, Radi O, Vidal V, et al. R-spondin1 is essential in sex determination, skin differentiation and malignancy. *Nat Genet*. 2006;38(11):1304-1309.
22. Zhao F, Franco HL, Rodriguez KF, et al. Elimination of the male reproductive tract in the female embryo is promoted by COUP-TFII in mice. *Science*. 2017;357(6352):717-720.
23. Burgoyne PS, Mitchell MJ. The role of mouse Y chromosome genes in spermatogenesis. In: Lau YFC, Chan WY, eds. *Y Chromosome and Male Germ Cell Biology*. Hackensack NJ: World Scientific Publishers; 2007:27-45.
24. Hughes JF, Page DC. The biology and evolution of mammalian Y chromosomes. *Annu Rev Genet*. 2015;49:507-527.
25. Lyon MF. Sex chromatin and gene action in the mammalian X-chromosome. *Am J Hum Genet*. 1962;14:135-148.
26. Russell LB. Mammalian X-chromosome action: inactivation limited in spread and region of origin. *Science*. 1963;140(3570):976-978.
27. Brown CJ, Ballabio A, Rupert JL, et al. A gene from the region of the human X inactivation centre is expressed exclusively from the inactive X chromosome. *Nature*. 1991;349(6304):38-44.
28. Lee JT, Bartolomei MS. X-inactivation, imprinting, and long noncoding RNAs in health and disease. *Cell*. 2013;152(6):1308-1323.
29. Disteche CM. Dosage compensation of the sex chromosomes and autosomes. *Semin Cell Dev Biol*. 2016;56:9-18.
30. Tukiainen T, Villani AC, Yen A, et al. Landscape of X chromosome inactivation across human tissues. *Nature*. 2017;550(7675):244-248.
31. Carrel L, Cottle AA, Goglin KC, Willard HF. A first-generation X-inactivation profile of the human X chromosome. *Proc Natl Acad Sci U S A*. 1999;96(25):14440-14444.
32. Nugent BM, O'Donnell CM, Epperson CN, Bale TL. Placental H3K27me3 establishes female resilience to prenatal insults. *Nat Commun*. 2018;9(1):2555.
33. Kaneko S, Li X. X chromosome protects against bladder cancer in females via a KDM6A-dependent epigenetic mechanism. *Sci Adv*. 2018;4:eaar5598.
34. Itoh Y, Golden LC, Itoh N, et al. The X-linked histone demethylase Kdm6a in CD4+ T lymphocytes modulates autoimmunity. *J Clin Invest*. 2019;129(9):3852-3863.
35. Davis EJ, Broestl L, Abdulai-Saiku S, et al. A second X chromosome contributes to resilience in a mouse model of Alzheimer's disease. *Sci Transl Med*. 2020;12(558):eaaz5677.
36. Link JC, Wiese CB, Chen X, et al. X chromosome dosage of histone demethylase KDM5C determines sex differences in adiposity. *J Clin Invest*. 2020;130(11):5688-5702.
37. Golden LC, Itoh Y, Itoh N, et al. Parent-of-origin differences in DNA methylation of X chromosome genes in T lymphocytes. *Proc Natl Acad Sci U S A*. 2019;116:26779-26787.
38. Migeon BR. Why females are mosaics, X-chromosome inactivation, and sex differences in disease. *Gend Med*. 2007;4(2):97-105.
39. MacLaughlin DT, Donahoe PK. Sex determination and differentiation. *N Engl J Med*. 2004;350(4):367-378.
40. Voutilainen R, Miller WL. Developmental expression of genes for the steroidogenic enzymes P450scc (20,22-desmolase), P450c17 (17 $\alpha$ -hydroxylase/17,20-lyase), and P450c21 (21-hydroxylase) in the human fetus. *J Clin Endocrinol Metab*. 1986;63(5):1145-1150.

41. Jost A. On the effects of early castration of the male rabbit embryo. *C R Seances Soc Biol Fil.* 1947;141(3-4):126-129.
42. Jost A, Vigier B, Prépin J, Perchellet JP. Studies on sex differentiation in mammals. *Recent Prog Horm Res.* 1973;29:1-41.
43. Ingraham HA, Hirokawa Y, Roberts LM, et al. Autocrine and paracrine Müllerian inhibiting substance hormone signaling in reproduction. *Recent Prog Horm Res.* 2000;55:53-67; discussion 67.
44. Lane AH, Donahoe PK. New insights into mullerian inhibiting substance and its mechanism of action. *J Endocrinol.* 1998;158(1):1-6.
45. Swain A. Ductal sex determination. *Science.* 2017;357(6352):648.
46. Flück CE, Meyer-Böni M, Pandey AV, et al. Why boys will be boys: two pathways of fetal testicular androgen biosynthesis are needed for male sexual differentiation. *Am J Hum Genet.* 2011;89(2):201-218.
47. Arlt W, Martens JW, Song M, Wang JT, Auchus RJ, Miller WL. Molecular evolution of adrenarche: structural and functional analysis of p450c17 from four primate species. *Endocrinology.* 2002;143(12):4665-4672.
48. Cutler GB Jr, Glenn M, Bush M, Hodgen GD, Graham CE, Loriaux DL. Adrenarche: a survey of rodents, domestic animals, and primates. *Endocrinology.* 1978;103(6):2112-2118.
49. Becker M, Hesse V. Minipuberty: why does it happen? *Horm Res Paediatr.* 2020;1-10.
50. Miller WL, Auchus RJ. The molecular biology, biochemistry, and physiology of human steroidogenesis and its disorders. *Endocr Rev.* 2011;32(1):81-151.
51. Miller WL, Bose HS. Early steps in steroidogenesis: intracellular cholesterol trafficking. *J Lipid Res.* 2011;52(12):2111-2135.
52. Mellon SH, Griffin LD. Neurosteroids: biochemistry and clinical significance. *Trends Endocrinol Metab.* 2002;13(1):35-43.
53. Missaghian E, Kempná P, Dick B, et al. Role of DNA methylation in the tissue-specific expression of the CYP17A1 gene for steroidogenesis in rodents. *J Endocrinol.* 2009;202(1):99-109.
54. Rege J, Turcu AF, Kasa-Vubu JZ, et al. 11-Ketotestosterone is the dominant circulating bioactive androgen during normal and premature adrenarche. *J Clin Endocrinol Metab.* 2018;103(12):4589-4598.
55. Nyby JG. Reflexive testosterone release: a model system for studying the nongenomic effects of testosterone upon male behavior. *Front Neuroendocrinol.* 2008;29(2):199-210.
56. Brouillette J, Rivard K, Lizotte E, Fiset C. Sex and strain differences in adult mouse cardiac repolarization: importance of androgens. *Cardiovasc Res.* 2005;65(1):148-157.
57. Nilsson ME, Vandenput L, Tivesten Å, et al. Measurement of a comprehensive sex steroid profile in rodent serum by high-sensitive gas chromatography-tandem mass spectrometry. *Endocrinology.* 2015;156(7):2492-2502.
58. Laurent MR, Hammond GL, Blokland M, et al. Sex hormone-binding globulin regulation of androgen bioactivity in vivo: validation of the free hormone hypothesis. *Sci Rep.* 2016;6:35539.
59. van Weerden WM, Bierings HG, van Steenbrugge GJ, de Jong FH, Schröder FH. Adrenal glands of mouse and rat do not synthesize androgens. *Life Sci.* 1992;50(12):857-861.
60. Morris JA, Jordan CL, Breedlove SM. Sexual differentiation of the vertebrate nervous system. *Nat Neurosci.* 2004;7(10):1034-1039.
61. McCarthy MM, Herold K, Stockman SL. Fast, furious and enduring: sensitive versus critical periods in sexual differentiation of the brain. *Physiol Behav.* 2018;187:13-19.
62. Bakker J, Brock O. Early oestrogens in shaping reproductive networks: evidence for a potential organisational role of oestradiol in female brain development. *J Neuroendocrinol.* 2010;22(7):728-735.
63. Roselli CE, Klosterman SA. Sexual differentiation of aromatase activity in the rat brain: effects of perinatal steroid exposure. *Endocrinology.* 1998;139(7):3193-3201.
64. McCarthy MM. Estradiol and the developing brain. *Physiol Rev.* 2008;88(1):91-124.
65. Bakker J, De Mees C, Douhard Q, et al. Alpha-fetoprotein protects the developing female mouse brain from masculinization and defeminization by estrogens. *Nat Neurosci.* 2006;9(2):220-226.
66. Hammond GL. Access of reproductive steroids to target tissues. *Obstet Gynecol Clin North Am.* 2002;29(3):411-423.
67. Hong H, Branham WS, Ng HW, et al. Human sex hormone-binding globulin binding affinities of 125 structurally diverse chemicals and comparison with their binding to androgen receptor, estrogen receptor, and  $\alpha$ -fetoprotein. *Toxicol Sci.* 2015;143(2):333-348.
68. Aussel C, Masseyeff R. Comparative binding properties of rat and human alpha-fetoproteins for arachidonic acid and estradiol. *Res Commun Chem Pathol Pharmacol.* 1983;42(2):261-269.
69. Mizejewski GJ. Biological roles of alpha-fetoprotein during pregnancy and perinatal development. *Exp Biol Med (Maywood).* 2004;229(6):439-463.
70. Breedlove SM. Sexual differentiation of the human nervous system. *Annu Rev Psychol.* 1994;45:389-418.
71. Place NJ, Holekamp KE, Sisk CL, et al. Effects of prenatal treatment with antiandrogens on luteinizing hormone secretion and sex steroid concentrations in adult spotted hyenas, *Crocota crocuta*. *Biol Reprod.* 2002;67(5):1405-1413.
72. Amateau SK, McCarthy MM. Induction of PGE2 by estradiol mediates developmental masculinization of sex behavior. *Nat Neurosci.* 2004;7(6):643-650.
73. Petersen SL, Krishnan S, Aggison LK, Intlekofer KA, Moura PJ. Sexual differentiation of the gonadotropin surge release mechanism: a new role for the canonical Nf $\kappa$ B signaling pathway. *Front Neuroendocrinol.* 2012;33(1):36-44.
74. Witchel SF. Disorders of sex development. *Best Pract Res Clin Obstet Gynaecol.* 2018;48:90-102.
75. Lee PA, Houk CP, Ahmed SF, Hughes IA; International Consensus Conference on Intersex organized by the Lawson Wilkins Pediatric Endocrine Society and the European Society for Paediatric Endocrinology. Consensus statement on management of intersex disorders. International Consensus Conference on Intersex. *Pediatrics.* 2006;118(2):e488-e500.
76. Baetens D, Verdin H, De Baere E, Cools M. Update on the genetics of differences of sex development (DSD). *Best Pract Res Clin Endocrinol Metab.* 2019;33(3):101271.
77. Miller WL. Disorders in the initial steps of steroid hormone synthesis. *J Steroid Biochem Mol Biol.* 2017;165(Pt A):18-37.
78. Quigley CA, De Bellis A, Marschke KB, el-Awady MK, Wilson EM, French FS. Androgen receptor defects: historical, clinical, and molecular perspectives. *Endocr Rev.* 1995;16(3):271-321.



79. Martínez-Frías ML. Developmental field defects and associations: epidemiological evidence of their relationship. *Am J Med Genet*. 1994;49(1):45-51.
80. Fontana L, Gentilin B, Fedele L, Gervasini C, Miozzo M. Genetics of Mayer-Rokitansky-Küster-Hauser (MRKH) syndrome. *Clin Genet*. 2017;91(2):233-246.
81. Hiort O, Birnbaum W, Marshall L, et al. Management of disorders of sex development. *Nat Rev Endocrinol*. 2014;10(9):520-529.
82. Achermann JC, Domenice S, Bachega TA, Nishi MY, Mendonca BB. Disorders of sex development: effect of molecular diagnostics. *Nat Rev Endocrinol*. 2015;11(8):478-488.
83. Sandberg DE, Gardner M, Callens N, Mazur T; DSD-TRN Psychosocial Workgroup, the DSD-TRN Advocacy Advisory Network, and Accord Alliance. Interdisciplinary care in disorders/differences of sex development (DSD): the psychosocial component of the DSD-Translational research network. *Am J Med Genet C Semin Med Genet*. 2017;175(2):279-292.
84. Hembree WC, Cohen-Kettenis PT, Gooren L, et al. Endocrine treatment of gender-dysphoric/gender-incongruent persons: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab*. 2017;102(11):3869-3903.
85. Winter S, Diamond M, Green J, et al. Transgender people: health at the margins of society. *Lancet*. 2016;388(10042):390-400.
86. Johns MM, Lowry R, Andrzejewski J, et al. Transgender identity and experiences of violence victimization, substance use, suicide risk, and sexual risk behaviors among high school students - 19 states and large urban school districts, 2017. *MMWR Morb Mortal Wkly Rep*. 2019;68:67-71.
87. Rider GN, McMorris BJ, Gower AL, Coleman E, Eisenberg ME. Health and care utilization of transgender and gender nonconforming youth: a population-based study. *Pediatrics*. 2018;141(3):e20171683.
88. Herman JL, Flores AR, Brown TNT, Wilson BDM, Conron KJ. *Age of Individuals Who Identify as Transgender in the United States*. Los Angeles: The Williams Institute, UCLA School of Law; 2017.
89. Rosenthal SM. Approach to the patient: transgender youth: endocrine considerations. *J Clin Endocrinol Metab*. 2014;99(12):4379-4389.
90. Saraswat A, Weinand JD, Safer JD. Evidence supporting the biologic nature of gender identity. *Endocr Pract*. 2015;21(2):199-204.
91. Steensma TD, Kreukels BP, de Vries AL, Cohen-Kettenis PT. Gender identity development in adolescence. *Horm Behav*. 2013;64(2):288-297.
92. Allen LS, Hines M, Shryne JE, Gorski RA. Two sexually dimorphic cell groups in the human brain. *J Neurosci*. 1989;9(2):497-506.
93. LeVay S. A difference in hypothalamic structure between heterosexual and homosexual men. *Science*. 1991;253:1034-1037.
94. Byne W, Tobet S, Mattiace LA, et al. The interstitial nuclei of the human anterior hypothalamus: an investigation of variation with sex, sexual orientation, and HIV status. *Horm Behav*. 2001;40(2):86-92.
95. Kreukels BP, Guillamon A. Neuroimaging studies in people with gender incongruence. *Int Rev Psychiatry*. 2016;28(1):120-128.
96. Feusner JD, Lidström A, Moody TD, Dhejne C, Bookheimer SY, Savic I. Intrinsic network connectivity and own body perception in gender dysphoria. *Brain Imaging Behav*. 2017;11(4):964-976.
97. Hahn A, Kranz GS, Sladky R, et al. Testosterone affects language areas of the adult human brain. *Hum Brain Mapp*. 2016;37(5):1738-1748.
98. Luders E, Sánchez FJ, Tosun D, et al. Increased cortical thickness in male-to-female transsexualism. *J Behav Brain Sci*. 2012;2(3):357-362.
99. Burke SM, Manzouri AH, Dhejne C, et al. Testosterone effects on the brain in transgender men. *Cereb Cortex*. 2018;28(5):1582-1596.
100. Coolidge FL, Thede LL, Young SE. The heritability of gender identity disorder in a child and adolescent twin sample. *Behav Genet*. 2002;32(4):251-257.
101. Heylens G, De Cuypere G, Zucker KJ, et al. Gender identity disorder in twins: a review of the case report literature. *J Sex Med*. 2012;9(3):751-757.
102. Berenbaum SA, Meyer-Bahlburg HF. Gender development and sexuality in disorders of sex development. *Horm Metab Res*. 2015;47(5):361-366.
103. Dessens AB, Slijper FM, Drop SL. Gender dysphoria and gender change in chromosomal females with congenital adrenal hyperplasia. *Arch Sex Behav*. 2005;34(4):389-397.
104. Frisén L, Nordenström A, Falhammar H, et al. Gender role behavior, sexuality, and psychosocial adaptation in women with congenital adrenal hyperplasia due to CYP21A2 deficiency. *J Clin Endocrinol Metab*. 2009;94(9):3432-3439.
105. Meyer-Bahlburg HF, Dolezal C, Baker SW, Carlson AD, Obeid JS, New MI. Prenatal androgenization affects gender-related behavior but not gender identity in 5-12-year-old girls with congenital adrenal hyperplasia. *Arch Sex Behav*. 2004;33(2):97-104.
106. Cohen-Kettenis PT. Gender change in 46,XY persons with 5 $\alpha$ -reductase-2 deficiency and 17 $\beta$ -hydroxysteroid dehydrogenase-3 deficiency. *Arch Sex Behav*. 2005;34(4):399-410.
107. Fisher AD, Ristori J, Morelli G, Maggi M. The molecular mechanisms of sexual orientation and gender identity. *Mol Cell Endocrinol*. 2018;467:3-13.
108. Lentini E, Kasahara M, Arver S, Savic I. Sex differences in the human brain and the impact of sex chromosomes and sex hormones. *Cereb Cortex*. 2013;23(10):2322-2336.
109. Raznahan A, Lee NR, Greenstein D, et al. Globally divergent but locally convergent X- and Y-chromosome influences on cortical development. *Cereb Cortex*. 2016;26(1):70-79.
110. Raznahan A, Parikhshak NN, Chandran V, et al. Sex-chromosome dosage effects on gene expression in humans. *Proc Natl Acad Sci U S A*. 2018;115(28):7398-7403.
111. Savic I, Frisen L, Manzouri A, Nordenstrom A, Lindén Hirschberg A. Role of testosterone and Y chromosome genes for the masculinization of the human brain. *Hum Brain Mapp*. 2017;38(4):1801-1814.
112. Arnold AP, Chen X. What does the "four core genotypes" mouse model tell us about sex differences in the brain and other tissues? *Front Neuroendocrinol*. 2009;30(1):1-9.
113. Arnold AP. Conceptual frameworks and mouse models for studying sex differences in physiology and disease: why compensation changes the game. *Exp Neurol*. 2014;259:2-9.
114. Burgoyne PS, Arnold AP. A primer on the use of mouse models for identifying direct sex chromosome effects that cause sex differences in non-gonadal tissues. *Biol Sex Differ*. 2016;7:68.
115. Arnold AP, Cassis LA, Eghbali M, Reue K, Sandberg K. Sex hormones and sex chromosomes cause sex differences in the

- development of cardiovascular diseases. *Arterioscler Thromb Vasc Biol.* 2017;37(5):746-756.
116. Arnold AP, Reue K, Eghbali M, et al. The importance of having two X chromosomes. *Philos Trans R Soc Lond B Biol Sci.* 2016;371(1688):20150113.
  117. Umar S, Cunningham CM, Itoh Y, et al. The Y chromosome plays a protective role in experimental hypoxic pulmonary hypertension. *Am J Respir Crit Care Med.* 2018;197(7):952-955.
  118. Shpargel KB, Sengoku T, Yokoyama S, Magnuson T. UTX and UTY demonstrate histone demethylase-independent function in mouse embryonic development. *Plos Genet.* 2012;8(9):e1002964.
  119. Li J, Chen X, McClusky R, et al. The number of X chromosomes influences protection from cardiac ischaemia/reperfusion injury in mice: one X is better than two. *Cardiovasc Res.* 2014;102(3):375-384.
  120. Ji H, Zheng W, Wu X, et al. Sex chromosome effects unmasked in angiotensin II-induced hypertension. *Hypertension.* 2010;55(5):1275-1282.
  121. Arnold AP. The end of gonad-centric sex determination in mammals. *Trends Genet.* 2012;28(2):55-61.
  122. Lowe R, Gemma C, Rakyan VK, Holland ML. Sexually dimorphic gene expression emerges with embryonic genome activation and is dynamic throughout development. *BMC Genomics.* 2015;16:295.
  123. Arnold AP. Rethinking sex determination of non-gonadal tissues. *Curr Top Dev Biol.* 2019;134:289-315.
  124. Shansky RM. Are hormones a "female problem" for animal research? *Science.* 2019;364(6443):825-826.
  125. Exploring the biological contributions to human health: does sex matter? *J Womens Health Gend Based Med.* 2001;10:433-439.
  126. T'Sjoen G, Arcelus J, Gooren L, Klink DT, Tangpricha V. Endocrinology of transgender medicine. *Endocr Rev.* 2019;40(1):97-117.
  127. Hasdemir B, Mhaske P, Paruthiyil S, et al. Sex- and corticotropin-releasing factor receptor 2- dependent actions of urocortin 1 during inflammation. *Am J Physiol Regul Integr Comp Physiol.* 2016;310(11):R1244-R1257.
  128. Kubat E, Mahajan S, Liao M, et al. Corticotropin-releasing factor receptor 2 mediates sex-specific cellular stress responses. *Mol Med.* 2013;19:212-222.
  129. Paruthiyil S, Hagiwara SI, Kundassery K, Bhargava A. Sexually dimorphic metabolic responses mediated by CRF2 receptor during nutritional stress in mice. *Biol Sex Differ.* 2018;9(1):49.
  130. Sorge RE, Martin LJ, Isbester KA, et al. Olfactory exposure to males, including men, causes stress and related analgesia in rodents. *Nat Methods.* 2014;11(6):629-632.
  131. Chen P, Hong W. Neural circuit mechanisms of social behavior. *Neuron.* 2018;98(1):16-30.
  132. Brown GR, Laland KN, Mulder MB. Bateman's principles and human sex roles. *Trends Ecol Evol.* 2009;24(6):297-304.
  133. Archer J. Does sexual selection explain human sex differences in aggression? *Behav Brain Sci.* 2009;32:249-266; discussion 266-311.
  134. Rutter M, Caspi A, Moffitt TE. Using sex differences in psychopathology to study causal mechanisms: unifying issues and research strategies. *J Child Psychol Psychiatry.* 2003;44(8):1092-1115.
  135. Crossley NA, Fox PT, Bullmore ET. Meta-connectomics: human brain network and connectivity meta-analyses. *Psychol Med.* 2016;46(5):897-907.
  136. Giedd JN, Raznahan A, Mills KL, Lenroot RK. Review: magnetic resonance imaging of male/female differences in human adolescent brain anatomy. *Biol Sex Differ.* 2012;3(1):19.
  137. Qiu LR, Fernandes DJ, Szulc-Lerch KU, et al. Mouse MRI shows brain areas relatively larger in males emerge before those larger in females. *Nat Commun.* 2018;9(1):2615.
  138. Swanson LW, Bota M. Foundational model of structural connectivity in the nervous system with a schema for wiring diagrams, connectome, and basic plan architecture. *Proc Natl Acad Sci U S A.* 2010;107(48):20610-20617.
  139. Chen K, Azeez A, Chen DY, Biswal BB. Resting-State Functional Connectivity: Signal Origins and Analytic Methods. *Neuroimaging Clin N Am.* 2020;30(1):15-23.
  140. Smith SM, Vidaurre D, Beckmann CF, et al. Functional connectomics from resting-state fMRI. *Trends Cogn Sci.* 2013;17(12):666-682.
  141. Basser PJ, Pierpaoli C. Microstructural and physiological features of tissues elucidated by quantitative-diffusion-tensor MRI. *J Magn Reson B.* 1996;111(3):209-219.
  142. Hagmann P, Cammoun L, Gigandet X, et al. Mapping the structural core of human cerebral cortex. *Plos Biol.* 2008;6(7):e159.
  143. Mori S, Crain BJ, Chacko VP, van Zijl PC. Three-dimensional tracking of axonal projections in the brain by magnetic resonance imaging. *Ann Neurol.* 1999;45(2):265-269.
  144. Savic I, Arver S. Sex differences in cortical thickness and their possible genetic and sex hormonal underpinnings. *Cereb Cortex.* 2014;24(12):3246-3257.
  145. Gerhard S, Daducci A, Lemkaddem A, Meuli R, Thiran JP, Hagmann P. The connectome viewer toolkit: an open source framework to manage, analyze, and visualize connectomes. *Front Neuroinform.* 2011;5:3.
  146. Glasser ME, Smith SM, Marcus DS, et al. The Human Connectome Project's neuroimaging approach. *Nat Neurosci.* 2016;19(9):1175-1187.
  147. Shen X, Finn ES, Scheinost D, et al. Using connectome-based predictive modeling to predict individual behavior from brain connectivity. *Nat Protoc.* 2017;12(3):506-518.
  148. Lotze M, Domin M, Gerlach FH, et al. Novel findings from 2838 adult brains on sex differences in gray matter brain volume. *Sci Rep.* 2019;9(1):1671.
  149. Ritchie SJ, Cox SR, Shen X, et al. Sex differences in the adult human brain: evidence from 5216 UK Biobank participants. *Cereb Cortex.* 2018;28(8):2959-2975.
  150. Knickmeyer RC, Xia K, Lu Z, et al. Impact of demographic and obstetric factors on infant brain volumes: a population neuroscience study. *Cereb Cortex.* 2017;27(12):5616-5625.
  151. Lenroot RK, Gogtay N, Greenstein DK, et al. Sexual dimorphism of brain developmental trajectories during childhood and adolescence. *Neuroimage.* 2007;36(4):1065-1073.
  152. Giedd JN, Raznahan A, Alexander-Bloch A, Schmitt E, Gogtay N, Rapoport JL. Child psychiatry branch of the National Institute of Mental Health longitudinal structural

- magnetic resonance imaging study of human brain development. *Neuropsychopharmacology*. 2015;40(1):43-49.
153. Kuczmarski RJ, Ogden CL, Guo SS, et al. 2000 CDC growth charts for the United States: methods and development. *Vital Health Stat 11*. 2002;1-190.
  154. Mutlu AK, Schneider M, Debbané M, Badoud D, Eliez S, Schaer M. Sex differences in thickness, and folding developments throughout the cortex. *Neuroimage*. 2013;82:200-207.
  155. Liu S, Seidlitz J, Blumenthal JD, Clasen LS, Raznahan A. Integrative structural, functional, and transcriptomic analyses of sex-biased brain organization in humans. *Proc Natl Acad Sci U S A*. 2020;117(31):18788-18798.
  156. Ruigrok AN, Salimi-Khorshidi G, Lai MC, et al. A meta-analysis of sex differences in human brain structure. *Neurosci Biobehav Rev*. 2014;39:34-50.
  157. Raznahan A, Lue Y, Probst F, et al. Triangulating the sexually dimorphic brain through high-resolution neuroimaging of murine sex chromosome aneuploidies. *Brain Struct Funct*. 2015;220(6):3581-3593.
  158. Fish AM, Nadig A, Seidlitz J, et al. Sex-biased trajectories of amygdalo-hippocampal morphology change over human development. *Neuroimage*. 2020;204:116122.
  159. Herting MM, Maxwell EC, Irvine C, Nagel BJ. The impact of sex, puberty, and hormones on white matter microstructure in adolescents. *Cereb Cortex*. 2012;22(9):1979-1992.
  160. Sporns O, Tononi G, Kötter R. The human connectome: a structural description of the human brain. *Plos Comput Biol*. 2005;1(4):e42.
  161. Tunc B, Solmaz B, Parker D, et al. Establishing a link between sex-related differences in the structural connectome and behaviour. *Philos Trans R Soc Lond B Biol Sci*. 2016;371(1688):20150111.
  162. Ingahlalikar M, Smith A, Parker D, et al. Sex differences in the structural connectome of the human brain. *Proc Natl Acad Sci U S A*. 2014;111(2):823-828.
  163. Gur RC, Richard J, Calkins ME, et al. Age group and sex differences in performance on a computerized neurocognitive battery in children age 8–21. *Neuropsychology*. 2012;26(2):251-265.
  164. Zhang C, Cahill ND, Arbabshirani MR, White T, Baum SA, Michael AM. Sex and age effects of functional connectivity in early adulthood. *Brain Connect*. 2016;6.
  165. Girvan M, Newman ME. Community structure in social and biological networks. *Proc Natl Acad Sci U S A*. 2002;99(12):7821-7826.
  166. Tononi G, Sporns O, Edelman GM. A measure for brain complexity: relating functional segregation and integration in the nervous system. *Proc Natl Acad Sci U S A*. 1994;91(11):5033-5037.
  167. Schwarz AJ, Gozzi A, Bifone A. Community structure and modularity in networks of correlated brain activity. *Magn Reson Imaging*. 2008;26(7):914-920.
  168. Moreno-Briseño P, Díaz R, Campos-Romo A, Fernandez-Ruiz J. Sex-related differences in motor learning and performance. *Behav Brain Funct*. 2010;6:74.
  169. Hedges LV, Nowell A. Sex differences in mental test scores, variability, and numbers of high-scoring individuals. *Science*. 1995;269(5220):41-45.
  170. Voyer D, Voyer S, Bryden MP. Magnitude of sex differences in spatial abilities: a meta-analysis and consideration of critical variables. *Psychol Bull*. 1995;117(2):250-270.
  171. Maguire EA, Gadian DG, Johnsrude IS, et al. Navigation-related structural change in the hippocampi of taxi drivers. *Proc Natl Acad Sci U S A*. 2000;97(8):4398-4403.
  172. Maguire EA, Woollett K, Spiers HJ. London taxi drivers and bus drivers: a structural MRI and neuropsychological analysis. *Hippocampus*. 2006;16(12):1091-1101.
  173. Draganski B, Gaser C, Busch V, Schuierer G, Bogdahn U, May A. Neuroplasticity: changes in grey matter induced by training. *Nature*. 2004;427(6972):311-312.
  174. Gaser C, Schlaug G. Gray matter differences between musicians and nonmusicians. *Ann N Y Acad Sci*. 2003;999:514-517.
  175. Mechelli A, Crinion JT, Noppeney U, et al. Neurolinguistics: structural plasticity in the bilingual brain. *Nature*. 2004;431(7010):757.
  176. Schlegel AA, Rudelson JJ, Tse PU. White matter structure changes as adults learn a second language. *J Cogn Neurosci*. 2012;24(8):1664-1670.
  177. Clayton JA. Applying the new SABV (sex as a biological variable) policy to research and clinical care. *Physiol Behav*. 2018;187:2-5.
  178. Hallam J, Boswell RG, DeVito EE, Kober H. Gender-related differences in food craving and obesity. *Yale J Biol Med*. 2016;89(2):161-173.
  179. Striegel-Moore RH, Rosselli F, Perrin N, et al. Gender difference in the prevalence of eating disorder symptoms. *Int J Eat Disord*. 2009;42(5):471-474.
  180. Pursey KM, Stanwell P, Callister RJ, Brain K, Collins CE, Burrows TL. Neural responses to visual food cues according to weight status: a systematic review of functional magnetic resonance imaging studies. *Front Nutr*. 2014;1:7.
  181. Cepeda-Benito A, Fernandez MC, Moreno S. Relationship of gender and eating disorder symptoms to reported cravings for food: construct validation of state and trait craving questionnaires in Spanish. *Appetite*. 2003;40(1):47-54.
  182. Imperatori C, Innamorati M, Tamburello S, et al. Gender differences in food craving among overweight and obese patients attending low energy diet therapy: a matched case-control study. *Eat Weight Disord*. 2013;18(3):297-303.
  183. Zellner DA, Garriga-Trillo A, Rohm E, Centeno S, Parker S. Food liking and craving: a cross-cultural approach. *Appetite*. 1999;33(1):61-70.
  184. Lafay L, Thomas F, Mennen L, et al.; Fleurbaix Laventie Ville Santé Study Group. Gender differences in the relation between food cravings and mood in an adult community: results from the fleurbaix laventie ville santé study. *Int J Eat Disord*. 2001;29(2):195-204.
  185. Pelchat ML. Food cravings in young and elderly adults. *Appetite*. 1997;28(2):103-113.
  186. Wang GJ, Volkow ND, Telang F, et al. Evidence of gender differences in the ability to inhibit brain activation elicited by food stimulation. *Proc Natl Acad Sci U S A*. 2009;106(4):1249-1254.
  187. Croll J, Neumark-Sztainer D, Story M, Ireland M. Prevalence and risk and protective factors related to disordered eating behaviors among adolescents: relationship to gender and ethnicity. *J Adolesc Health*. 2002;31(2):166-175.
  188. Kenny PJ. Reward mechanisms in obesity: new insights and future directions. *Neuron*. 2011;69(4):664-679.
  189. Saper CB, Chou TC, Elmquist JK. The need to feed: homeostatic and hedonic control of eating. *Neuron*. 2002;36(2):199-211.



190. Zheng H, Berthoud HR. Eating for pleasure or calories. *Curr Opin Pharmacol*. 2007;7(6):607-612.
191. Ziauddeen H, Alonso-Alonso M, Hill JO, Kelley M, Khan NA. Obesity and the neurocognitive basis of food reward and the control of intake. *Adv Nutr*. 2015;6(4):474-486.
192. Gupta AM, EA, Sanmiguel CP, et al. Patterns of brain structural connectivity differentiate normal weight from overweight subjects. *Neuroimage Clin*. 2015;7:506-517.
193. Yokum SN, J, Stice E. Attentional bias to food images associated with elevated weight and future weight gain: an fMRI study. *Obesity (Silver Spring)*. 2011;19:1775-1783.
194. Stoeckel LE, Weller RE, Cook 3rd EW, Twieg DB, Knowlton RC, Cox JE. Widespread reward-system activation in obese women in response to pictures of high-calorie foods. *Neuroimage*. 2008;41:636-647.
195. Dimitropoulos AT, Tkach J, Ho A, Kennedy J. Greater corticolimbic activation to high-calorie food cues after eating in obese vs. normal-weight adults. *Appetite*. 2012;58(1):303-312.
196. Martin LE, Holsen LM, Chambers RJ, et al. Neural mechanisms associated with food motivation in obese and healthy weight adults. *Obesity (Silver Spring)*. 2010;18:254-260.
197. Stice E, Spoor S, Bohon C, Veldhuizen MG, Small DM. Relation of reward from food intake and anticipated food intake to obesity: a functional magnetic resonance imaging study. *J Abnorm Psychol*. 2008;117(4):924-935.
198. Connolly L, Coveleskie K, Kilpatrick LA, et al. Differences in brain responses between lean and obese women to a sweetened drink. *Neurogastroenterol Motil*. 2013;25(7):579-e460.
199. Bragulat V, Dzemidzic M, Bruno C, et al. Food-related odor probes of brain reward circuits during hunger: a pilot FMRI study. *Obesity (Silver Spring)*. 2010;18(8):1566-1571.
200. Haase L, Green E, Murphy C. Males and females show differential brain activation to taste when hungry and sated in gustatory and reward areas. *Appetite*. 2011;57(2):421-434.
201. Melasch J, Rullmann M, Hilbert A, et al. Sex differences in serotonin-hypothalamic connections underpin a diminished sense of emotional well-being with increasing body weight. *Int J Obes (Lond)*. 2016;40(8):1268-1277.
202. Cornier MA, Salzberg AK, Endly DC, Bessesen DH, Tregellas JR. Sex-based differences in the behavioral and neuronal responses to food. *Physiol Behav*. 2010;99(4):538-543.
203. Geliebter A, Pantazatos SP, McOuatt H, Puma L, Gibson CD, Atalayer D. Sex-based fMRI differences in obese humans in response to high vs. low energy food cues. *Behav Brain Res*. 2013;243:91-96.
204. Gupta A, Mayer EA, Hamadani K, et al. Sex differences in the influence of body mass index on anatomical architecture of brain networks. *Int J Obes (2005)*. 2017.
205. Gupta A, Mayer EA, Labus JS, et al. Sex commonalities and differences in obesity-related alterations in intrinsic brain activity and connectivity. *Obesity (Silver Spring)*. 2018;26(2):340-350.
206. Polanczyk G, de Lima MS, Horta BL, Biederman J, Rohde LA. The worldwide prevalence of ADHD: a systematic review and meta-regression analysis. *Am J Psychiatry*. 2007;164(6):942-948.
207. Remes O, Brayne C, van der Linde R, Lafortune L. A systematic review of reviews on the prevalence of anxiety disorders in adult populations. *Brain Behav*. 2016;6(7):e00497.
208. Smink FRE, van Hoeken D, Dijkstra JK, Deen M, Oldehinkel AJ, Hoek HW. Self-esteem and peer-perceived social status in early adolescence and prediction of eating pathology in young adulthood. *Int J Eat Disord*. 2018;51(8):852-862.
209. Riedel BC, Thompson PM, Brinton RD. Age, APOE and sex: triad of risk of Alzheimer's disease. *J Steroid Biochem Mol Biol*. 2016;160:134-147.
210. Cahill L. Why sex matters for neuroscience. *Nat Rev Neurosci*. 2006;7(6):477-484.
211. Corre C, Friedel M, Vousden DA, et al. Separate effects of sex hormones and sex chromosomes on brain structure and function revealed by high-resolution magnetic resonance imaging and spatial navigation assessment of the Four Core Genotype mouse model. *Brain Struct Funct*. 2016;221(2):997-1016.
212. Mankiw C, Park MTM, Reardon PK, et al. Allometric analysis detects brain size-independent effects of sex and sex chromosome complement on human cerebellar organization. *J Neurosci*. 2017;37(21):5221-5231.
213. Joel D, Berman Z, Tavor I, et al. Sex beyond the genitalia: the human brain mosaic. *Proc Natl Acad Sci U S A*. 2015;112(50):15468-15473.
214. Wierenga LM, Bos MGN, Schreuders E, et al. Unraveling age, puberty and testosterone effects on subcortical brain development across adolescence. *Psychoneuroendocrinology*. 2018;91:105-114.
215. Mueller SC, Landré L, Wierckx K, T'Sjoen G. A structural magnetic resonance imaging study in transgender persons on cross-sex hormone therapy. *Neuroendocrinology*. 2017;105(2):123-130.
216. Merke DP, Fields JD, Keil ME, Vaituzis AC, Chrousos GP, Giedd JN. Children with classic congenital adrenal hyperplasia have decreased amygdala volume: potential prenatal and postnatal hormonal effects. *J Clin Endocrinol Metab*. 2003;88(4):1760-1765.
217. Martin CR, Osadchiy V, Kalani A, Mayer EA. The brain-gut-microbiome axis. *Cell Mol Gastroenterol Hepatol*. 2018;6(2):133-148.
218. Hagiwara SI, Kaushal E, Paruthiyil S, Pasricha PJ, Hasdemir B, Bhargava A. Gastric corticotropin-releasing factor influences mast cell infiltration in a rat model of functional dyspepsia. *Plos One*. 2018;13(9):e0203704.
219. Kessler RC, Petukhova M, Sampson NA, Zaslavsky AM, Wittchen H-U. Twelve-month and lifetime prevalence and lifetime morbid risk of anxiety and mood disorders in the United States. *Int J Methods Psychiatr Res*. 2012;21(3):169-184.
220. Tesic A, Rodgers S, Müller M, et al. Sex differences in neurodevelopmental and common mental disorders examined from three epidemiological perspectives. *Psychiatry Res*. 2019;278:213-217.
221. Pinares-Garcia P, Stratikopoulos M, Zagato A, Loke H, Lee J. Sex: a significant risk factor for neurodevelopmental and neurodegenerative disorders. *Brain Sci*. 2018;8:154.
222. Kokras N, Hodes GE, Bangasser DA, Dalla C. Sex differences in the hypothalamic-pituitary-adrenal axis: an obstacle to antidepressant drug development? *Br J Pharmacol*. 2019;176(21):4090-4106.

223. Cahill L, Aswad D. Sex influences on the brain: an issue whose time has come. *Neuron*. 2015;88(6):1084-1085.
224. Mendrek A, Mancini-Marie A. Sex/gender differences in the brain and cognition in schizophrenia. *Neurosci Biobehav Rev*. 2016;67:57-78.
225. Bray GA, Heisel WE, Afshin A, et al. The science of obesity management: an Endocrine Society scientific statement. *Endocr Rev*. 2018;39(2):79-132.
226. Gartner DR, Taber DR, Hirsch JA, Robinson WR. The spatial distribution of gender differences in obesity prevalence differs from overall obesity prevalence among US adults. *Ann Epidemiol*. 2016;26(4):293-298.
227. Hales CM, Fryar CD, Carroll MD, Freedman DS, Ogden CL. Trends in obesity and severe obesity prevalence in US youth and adults by sex and age, 2007–2008 to 2015–2016. *JAMA*. 2018;319:1723-1725.
228. Mond JM, Baune BT. Overweight, medical comorbidity and health-related quality of life in a community sample of women and men. *Obesity (Silver Spring)*. 2009;17(8):1627-1634.
229. Lovejoy JC, Sainsbury A; Stock Conference 2008 Working Group. Sex differences in obesity and the regulation of energy homeostasis. *Obes Rev*. 2009;10(2):154-167.
230. Kelly T, Yang W, Chen CS, Reynolds K, He J. Global burden of obesity in 2005 and projections to 2030. *Int J Obes (Lond)*. 2008;32:1431-1437.
231. Power ML, Schulkin J. Sex differences in fat storage, fat metabolism, and the health risks from obesity: possible evolutionary origins. *Br J Nutr*. 2008;99(5):931-940.
232. Weltens N, Iven J, Van Oudenhove L, Kano M. The gut-brain axis in health neuroscience: implications for functional gastrointestinal disorders and appetite regulation. *Ann N Y Acad Sci*. 2018;1428(1):129-150.
233. Leigh SJ, Morris MJ. Diet, inflammation and the gut microbiome: Mechanisms for obesity-associated cognitive impairment. *Biochim Biophys Acta Mol Basis Dis*. 2020;1866(6):165767.
234. Torres-Fuentes C, Schellekens H, Dinan TG, Cryan JF. The microbiota-gut-brain axis in obesity. *Lancet Gastroenterol Hepatol*. 2017;2(10):747-756.
235. Shreiner AB, Kao JY, Young VB. The gut microbiome in health and in disease. *Curr Opin Gastroenterol*. 2015;31(1):69-75.
236. Osadchiy V, Martin CR, Mayer EA. The gut-brain axis and the microbiome: mechanisms and clinical implications. *Clin Gastroenterol Hepatol*. 2019;17(2):322-332.
237. Dong TS, Gupta A. Influence of early life, diet, and the environment on the microbiome. *Clin Gastroenterol Hepatol*. 2019;17(2):231-242.
238. Jašarević E, Morrison KE, Bale TL. Sex differences in the gut microbiome-brain axis across the lifespan. *Philos Trans R Soc Lond B Biol Sci*. 2016;371(1688):20150122.
239. Markle JG, Frank DN, Mortin-Toth S, et al. Sex differences in the gut microbiome drive hormone-dependent regulation of autoimmunity. *Science*. 2013;339(6123):1084-1088.
240. Yurkovetskiy L, Burrows M, Khan AA, et al. Gender bias in autoimmunity is influenced by microbiota. *Immunity*. 2013;39(2):400-412.
241. Yatsunenkov T, Rey FE, Manary MJ, et al. Human gut microbiome viewed across age and geography. *Nature*. 2012;486(7402):222-227.
242. Collins SM, Kassam Z, Bercik P. The adoptive transfer of behavioral phenotype via the intestinal microbiota: experimental evidence and clinical implications. *Curr Opin Microbiol*. 2013;16(3):240-245.
243. Chen KL, Madak-Erdogan Z. Estrogen and microbiota cross-talk: should we pay attention? *Trends Endocrinol Metab*. 2016;27(11):752-755.
244. Plottel CS, Blaser MJ. Microbiome and malignancy. *Cell Host Microbe*. 2011;10(4):324-335.
245. Moser VA, Pike CJ. Obesity and sex interact in the regulation of Alzheimer's disease. *Neurosci Biobehav Rev*. 2016;67:102-118.
246. Stachowiak G, Pertyński T, Pertyńska-Marczewska M. Metabolic disorders in menopause. *Prz Menopauzalny*. 2015;14(1):59-64.
247. Hulley S, Grady D, Bush T, et al. Randomized trial of estrogen plus progestin for secondary prevention of coronary heart disease in postmenopausal women. Heart and Estrogen/progestin Replacement Study (HERS) Research Group. *Jama*. 1998;280(7):605-613.
248. Lichanska AM, Waters MJ. How growth hormone controls growth, obesity and sexual dimorphism. *Trends Genet*. 2008;24(1):41-47.
249. Lee C, Kim J, Jung Y. Potential therapeutic application of estrogen in gender disparity of nonalcoholic fatty liver disease/nonalcoholic steatohepatitis. *Cells*. 2019;8(10):1259.
250. Monteiro R, Teixeira D, Calhau C. Estrogen signaling in metabolic inflammation. *Mediators Inflamm*. 2014;2014:615917.
251. Eaton SA, Sethi JK. Immunometabolic links between estrogen, adipose tissue and female reproductive metabolism. *Biology (Basel)*. 2019;8(1):8.
252. Al-Suhaimi EA, Shehzad A. Leptin, resistin and visfatin: the missing link between endocrine metabolic disorders and immunity. *Eur J Med Res*. 2013;18:12.
253. O'Mahony SM, Clarke G, Borre YE, Dinan TG, Cryan JF. Serotonin, tryptophan metabolism and the brain-gut-microbiome axis. *Behav Brain Res*. 2015;277:32-48.
254. Mawe GM, Hoffman JM. Serotonin signalling in the gut—functions, dysfunctions and therapeutic targets. *Nat Rev Gastroenterol Hepatol*. 2013;10(8):473-486.
255. Kennedy PJ, Cryan JF, Dinan TG, Clarke G. Kynurenine pathway metabolism and the microbiota-gut-brain axis. *Neuropharmacology*. 2017;112(Pt B):399-412.
256. Mangge H, Summers KL, Meinitzer A, et al. Obesity-related dysregulation of the tryptophan-kynurenine metabolism: role of age and parameters of the metabolic syndrome. *Obesity (Silver Spring)*. 2014;22(1):195-201.
257. Favenec M, Hennart B, Caiazzo R, et al. The kynurenine pathway is activated in human obesity and shifted toward kynurenine monooxygenase activation. *Obesity (Silver Spring)*. 2015;23(10):2066-2074.
258. Cazes F, Cohen JI, Yau PL, Talbot H, Convit A. Obesity-mediated inflammation may damage the brain circuit that regulates food intake. *Brain Res*. 2011;1373:101-109.
259. Castanon N, Lasselin J, Capuron L. Neuropsychiatric comorbidity in obesity: role of inflammatory processes. *Front Endocrinol (Lausanne)*. 2014;5:74.



260. Jhamandas K, Boegman RJ, Beninger RJ, Bialik M. Quinolinat-induced cortical cholinergic damage: modulation by tryptophan metabolites. *Brain Res.* 1990;529(1-2):185-191.
261. Raheja UK, Fuchs D, Giegling I, et al. In psychiatrically healthy individuals, overweight women but not men have lower tryptophan levels. *Pteridines.* 2015;26(2):79-84.
262. Theofylaktopoulou D, Middtun Ø, Ulvik A, et al. A community-based study on determinants of circulating markers of cellular immune activation and kynurenines: the Hordaland Health Study. *Clin Exp Immunol.* 2013;173(1):121-130.
263. Cortese S, Faraone SV, Bernardi S, Wang S, Blanco C. Gender differences in adult attention-deficit/hyperactivity disorder: results from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). *J Clin Psychiatry.* 2016;77(4):e421-e428.
264. Wittchen HU, Jacobi F, Rehm J, et al. The size and burden of mental disorders and other disorders of the brain in Europe 2010. *Eur Neuropsychopharmacol.* 2011;21:655-679.
265. Salk RH, Hyde JS, Abramson LY. Gender differences in depression in representative national samples: meta-analyses of diagnoses and symptoms. *Psychol Bull.* 2017;143(8):783-822.
266. Diflorio A, Jones I. Is sex important? Gender differences in bipolar disorder. *Int Rev Psychiatry.* 2010;22(5):437-452.
267. Sramek JJ, Murphy MF, Cutler NR. Sex differences in the psychopharmacological treatment of depression. *Dialogues Clin Neurosci.* 2016;18(4):447-457.
268. Kokras N, Dalla C. Preclinical sex differences in depression and antidepressant response: implications for clinical research. *J Neurosci Res.* 2017;95(1-2):731-736.
269. Bangasser DA. Sex differences in stress-related receptors: "micro" differences with "macro" implications for mood and anxiety disorders. *Biol Sex Differ.* 2013;4(1):2.
270. Bredewold R, Schiavo JK, van der Hart M, Verreij M, Veenema AH. Dynamic changes in extracellular release of GABA and glutamate in the lateral septum during social play behavior in juvenile rats: implications for sex-specific regulation of social play behavior. *Neuroscience.* 2015;307:117-127.
271. Campi KL, Greenberg GD, Kapoor A, Ziegler TE, Trainor BC. Sex differences in effects of dopamine D1 receptors on social withdrawal. *Neuropharmacology.* 2014;77:208-216.
272. Hauser AS, Attwood MM, Rask-Andersen M, Schiöth HB, Gloriam DE. Trends in GPCR drug discovery: new agents, targets and indications. *Nat Rev Drug Discov.* 2017;16(12):829-842.
273. Bangasser DA, Wiersielis KR. Sex differences in stress responses: a critical role for corticotropin-releasing factor. *Hormones (Athens).* 2018;17(1):5-13.
274. Vuppalahadham L, Ehsan C, Akkati M, Bhargava A. Corticotropin-releasing factor family: a stress hormone-receptor system's emerging role in mediating sex-specific signaling. *Cells.* 2020;9(4):839.
275. Pal K, Swaminathan K, Xu HE, Pioszak AA. Structural basis for hormone recognition by the Human CRFR2[α] G protein-coupled receptor. *J Biol Chem.* 2010;285(51):40351-40361.
276. Iwasaki-Sekino A, Mano-Otagiri A, Ohata H, Yamauchi N, Shibasaki T. Gender differences in corticotropin and corticosterone secretion and corticotropin-releasing factor mRNA expression in the paraventricular nucleus of the hypothalamus and the central nucleus of the amygdala in response to footshock stress or psychological stress in rats. *Psychoneuroendocrinology.* 2009;34(2):226-237.
277. Viau V, Bingham B, Davis J, Lee P, Wong M. Gender and puberty interact on the stress-induced activation of parvocellular neurosecretory neurons and corticotropin-releasing hormone messenger ribonucleic acid expression in the rat. *Endocrinology.* 2005;146(1):137-146.
278. Stinnett GS, Westphal NJ, Seasholtz AF. Pituitary CRH-binding protein and stress in female mice. *Physiol Behav.* 2015;150:16-23.
279. Gallucci WT, Baum A, Laue L, et al. Sex differences in sensitivity of the hypothalamic-pituitary-adrenal axis. *Health Psychol.* 1993;12(5):420-425.
280. Valentino RJ, Van Bockstaele EJ. Corticotropin-releasing factor: putative neurotransmitter actions of a neurohormone. In: D Pfaff AA, Etgen A, Fahrbach S, Moss R, Rubin R, eds. *Hormones, Brain and Behavior.* Vol. 4. San Diego: Academic Press; 2002:81-102.
281. Weathington JM, Cooke BM. Corticotropin-releasing factor receptor binding in the amygdala changes across puberty in a sex-specific manner. *Endocrinology.* 2012;153(12):5701-5705.
282. Crestani CC, Alves FH, Gomes FV, Resstel LB, Correa FM, Herman JP. Mechanisms in the bed nucleus of the stria terminalis involved in control of autonomic and neuroendocrine functions: a review. *Curr Neuropharmacol.* 2013;11(2):141-159.
283. Lim MM, Nair HP, Young LJ. Species and sex differences in brain distribution of corticotropin-releasing factor receptor subtypes 1 and 2 in monogamous and promiscuous vole species. *J Comp Neurol.* 2005;487(1):75-92.
284. Catalano RD, Kyriakou T, Chen J, Easton A, Hillhouse EW. Regulation of corticotropin-releasing hormone type 2 receptors by multiple promoters and alternative splicing: identification of multiple splice variants. *Mol Endocrinol.* 2003;17(3):395-410.
285. Weiser MJ, Goel N, Sandau US, Bale TL, Handa RJ. Androgen regulation of corticotropin-releasing hormone receptor 2 (CRHR2) mRNA expression and receptor binding in the rat brain. *Exp Neurol.* 2008;214(1):62-68.
286. Aston-Jones G, Bloom FE. Activity of norepinephrine-containing locus coeruleus neurons in behaving rats anticipates fluctuations in the sleep-waking cycle. *J Neurosci.* 1981;1(8):876-886.
287. Aston-Jones G. CHAPTER 11 - Locus coeruleus, A5 and A7 noradrenergic cell groups A2 - Paxinos, George. *The Rat Nervous System (THIRD EDITION).* Burlington: Academic Press; 2004:259-294.
288. Berridge CW, Page ME, Valentino RJ, Foote SL. Effects of locus coeruleus inactivation on electroencephalographic activity in neocortex and hippocampus. *Neuroscience.* 1993;55(2):381-393.
289. Berridge CW, Abercrombie ED. Relationship between locus coeruleus discharge rates and rates of norepinephrine release within neocortex as assessed by in vivo microdialysis. *Neuroscience.* 1999;93(4):1263-1270.
290. Curtis AL, Lechner SM, Pavcovich LA, Valentino RJ. Activation of the locus coeruleus noradrenergic system by intracoeular microinfusion of corticotropin-releasing factor: effects on

- discharge rate, cortical norepinephrine levels and cortical electroencephalographic activity. *J Pharmacol Exp Ther.* 1997;281(1):163-172.
291. Valentino RJ, Curtis AL, Page ME, Pavcovich LA, Florin-Lechner SM. Activation of the locus ceruleus brain noradrenergic system during stress: circuitry, consequences, and regulation. *Adv Pharmacol.* 1998;42:781-784.
  292. Gold PW, Chrousos GP. Organization of the stress system and its dysregulation in melancholic and atypical depression: high vs low CRH/NE states. *Mol Psychiatry.* 2002;7(3):254-275.
  293. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders: DSM-5.* 5th ed. American Psychiatric Publishing; 2013.
  294. Hagiwara SI, Hasdemir B, Heyman MB, Chang L, Bhargava A. Plasma corticotropin-releasing factor receptors and B7-2(+) extracellular vesicles in blood correlate with irritable bowel syndrome disease severity. *Cells.* 2019;8(2):101.
  295. Grammatopoulos DK, Randeve HS, Levine MA, Kanellopoulou KA, Hillhouse EW. Rat cerebral cortex corticotropin-releasing hormone receptors: evidence for receptor coupling to multiple G-proteins. *J Neurochem.* 2001;76(2):509-519.
  296. Chen FM, Bilezikjian LM, Perrin MH, Rivier J, Vale W. Corticotropin releasing factor receptor-mediated stimulation of adenylate cyclase activity in the rat brain. *Brain Res.* 1986;381(1):49-57.
  297. De Souza EB. Corticotropin-releasing factor receptors: physiology, pharmacology, biochemistry and role in central nervous system and immune disorders. *Psychoneuroendocrinology.* 1995;20(8):789-819.
  298. Bangasser DA, Curtis A, Reyes BA, et al. Sex differences in corticotropin-releasing factor receptor signaling and trafficking: potential role in female vulnerability to stress-related psychopathology. *Mol Psychiatry.* 2010;15:877, 896-904.
  299. Valentino RJ, Van Bockstaele E, Bangasser D. Sex-specific cell signaling: the corticotropin-releasing factor receptor model. *Trends Pharmacol Sci.* 2013;34(8):437-444.
  300. Bangasser DA, Dong H, Carroll J, et al. Corticotropin-releasing factor overexpression gives rise to sex differences in Alzheimer's disease-related signaling. *Mol Psychiatry.* 2017;22(8):1126-1133.
  301. Komuro H, Sato N, Sasaki A, et al. Corticotropin-releasing hormone receptor 2 gene variants in irritable bowel syndrome. *PLoS One.* 2016;11(1):e0147817.
  302. Wolf EJ, Mitchell KS, Logue MW, et al. Corticotropin releasing hormone receptor 2 (CRHR-2) gene is associated with decreased risk and severity of posttraumatic stress disorder in women. *Depress Anxiety.* 2013;30(12):1161-1169.
  303. Mahajan A, Taliun D, Thurner M, et al. Fine-mapping type 2 diabetes loci to single-variant resolution using high-density imputation and islet-specific epigenome maps. *Nat Genet.* 2018;50(11):1505-1513.
  304. Kautzky-Willer A, Harreiter J, Pacini G. Sex and gender differences in risk, pathophysiology and complications of type 2 diabetes mellitus. *Endocr Rev.* 2016;37(3):278-316.
  305. Bergmann N, Gynzelberg F, Faber J. The appraisal of chronic stress and the development of the metabolic syndrome: a systematic review of prospective cohort studies. *Endocr Connect.* 2014;3(2):R55-R80.
  306. Fuller-Jackson JP, Dordevic AL, Clarke IJ, Henry BA. Effect of sex and sex steroids on brown adipose tissue heat production in humans. *Eur J Endocrinol.* 2020;183(3):343-355.
  307. Romagnuolo J, Talluri J, Kennard E, et al. Clinical profile, etiology, and treatment of chronic pancreatitis in North American Women: analysis of a large multicenter cohort. *Pancreas.* 2016;45(7):934-940.
  308. Violin JD, Lefkowitz RJ. Beta-arrestin-biased ligands at seven-transmembrane receptors. *Trends Pharmacol Sci.* 2007;28(8):416-422.
  309. Whalen EJ, Rajagopal S, Lefkowitz RJ. Therapeutic potential of  $\beta$ -arrestin- and G protein-biased agonists. *Trends Mol Med.* 2011;17(3):126-139.
  310. Murrough JW, Charney DS. Corticotropin-releasing factor type 1 receptor antagonists for stress-related disorders: time to call it quits? *Biol Psychiatry.* 2017;82(12):858-860.
  311. Hasdemir B, Mahajan S, Oses-Prieto J, et al. Actin cytoskeleton-dependent regulation of corticotropin-releasing factor receptor heteromers. *Mol Biol Cell.* 2017;28(18):2386-2399.
  312. Mikhailova MV, Mayeux PR, Jurkevich A, et al. Heterooligomerization between vasotocin and corticotropin-releasing hormone (CRH) receptors augments CRH-stimulated 3',5'-cyclic adenosine monophosphate production. *Mol Endocrinol.* 2007;21(9):2178-2188.
  313. Murat B, Devost D, Andr s M, et al. V1b and CRHR1 receptor heterodimerization mediates synergistic biological actions of vasopressin and CRH. *Mol Endocrinol.* 2012;26(3):502-520.
  314. Chaki S, Nakazato A, Kennis L, et al. Anxiolytic- and antidepressant-like profile of a new CRF1 receptor antagonist, R278995/CRA0450. *Eur J Pharmacol.* 2004;485(1-3):145-158.
  315. Deak T, Nguyen KT, Ehrlich AL, et al. The impact of the nonpeptide corticotropin-releasing hormone antagonist antalarmin on behavioral and endocrine responses to stress. *Endocrinology.* 1999;140(1):79-86.
  316. Mansbach RS, Brooks EN, Chen YL. Antidepressant-like effects of CP-154,526, a selective CRF1 receptor antagonist. *Eur J Pharmacol.* 1997;323(1):21-26.
  317. Zorrilla EP, Valdez GR, Nozulak J, Koob GF, Markou A. Effects of antalarmin, a CRF type 1 receptor antagonist, on anxiety-like behavior and motor activation in the rat. *Brain Res.* 2002;952(2):188-199.
  318. Howerton AR, Roland AV, Fluharty JM, et al. Sex differences in corticotropin-releasing factor receptor-1 action within the dorsal raphe nucleus in stress responsivity. *Biol Psychiatry.* 2014;75(11):873-883.
  319. Ising M, Zimmermann US, K nzel HE, et al. High-affinity CRF1 receptor antagonist NBI-34041: preclinical and clinical data suggest safety and efficacy in attenuating elevated stress response. *Neuropsychopharmacology.* 2007;32(9):1941-1949.
  320. Beery AK, Zucker I. Sex bias in neuroscience and biomedical research. *Neurosci Biobehav Rev.* 2011;35(3):565-572.
  321. Will TR, Proa o SB, Thomas AM, et al. Problems and progress regarding sex bias and omission in neuroscience research. *eNeuro.* 2017;4:ENEURO.0278-0217.2017.
  322. Rademaker M. Do women have more adverse drug reactions? *Am J Clin Dermatol.* 2001;2:349-351.

323. McKenzie BE. Guidelines and requirements for the evaluation of contraceptive steroids. *Toxicol Pathol.* 1989;17(2):377-384.
324. Farkouh A, Riedl T, Gottardi R, Czejka M, Kautzky-Willer A. Sex-related differences in pharmacokinetics and pharmacodynamics of frequently prescribed drugs: a review of the literature. *Adv Ther.* 2020;37(2):644-655.
325. Franconi F, Campesi I. Pharmacogenomics, pharmacokinetics and pharmacodynamics: interaction with biological differences between men and women. *Br J Pharmacol.* 2014;171(3):580-594.
326. Gartlehner G, Chapman A, Strobelberger M, Thaler K. Differences in efficacy and safety of pharmaceutical treatments between men and women: an umbrella review. *Plos One.* 2010;5(7):e11895.
327. Viramontes BE, Camilleri M, McKinzie S, Pardi DS, Burton D, Thomforde GM. Gender-related differences in slowing colonic transit by a 5-HT3 antagonist in subjects with diarrhea-predominant irritable bowel syndrome. *Am J Gastroenterol.* 2001;96(9):2671-2676.
328. Mosca L, Barrett-Connor E, Wenger NK. Sex/gender differences in cardiovascular disease prevention: what a difference a decade makes. *Circulation.* 2011;124(19):2145-2154.
329. WHO. *Cardiovascular Disease.* 2017. Accessed April 2020. <https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-cvds>
330. Maas AH, Appelman YE. Gender differences in coronary heart disease. *Neth Heart J.* 2010;18(12):598-602.
331. Regitz-Zagrosek V. Unsettled issues and future directions for research on cardiovascular diseases in women. *Korean Circ J.* 2018;48(9):792-812.
332. Colafella KMM, Denton KM. Sex-specific differences in hypertension and associated cardiovascular disease. *Nat Rev Nephrol.* 2018;14(3):185-201.
333. Mannon EC, Ray SC, Ryan MJ, Sullivan JC. Does sex matter?: an update on the implementation of sex as a biological variable in research. *Am J Physiol Renal Physiol.* 2020;318(2):F329-F331.
334. Guyton AC, Coleman TG, Young DB, Lohmeier TE, DeClue JW. Salt balance and long-term blood pressure control. *Annu Rev Med.* 1980;31:15-27.
335. Davel AP, Jaffe IZ, Tostes RC, Jaisser F, Belin de Chantemèle EJ. New roles of aldosterone and mineralocorticoid receptors in cardiovascular disease: translational and sex-specific effects. *Am J Physiol Heart Circ Physiol.* 2018;315(4):H989-H999.
336. Wiinberg N, Høegholm A, Christensen HR, et al. 24-h ambulatory blood pressure in 352 normal Danish subjects, related to age and gender. *Am J Hypertens.* 1995;8(10 Pt 1):978-986.
337. Yong LC, Kuller LH, Rutan G, Bunker C. Longitudinal study of blood pressure: changes and determinants from adolescence to middle age. The Dormont High School follow-up study, 1957-1963 to 1989-1990. *Am J Epidemiol.* 1993;138:973-983.
338. Sandberg K, Ji H. Sex differences in primary hypertension. *Biol Sex Differ.* 2012;3(1):7.
339. Himmelmann A, Svensson A, Hansson L. Influence of sex on blood pressure and left ventricular mass in adolescents: the hypertension in pregnancy offspring study. *J Hum Hypertens.* 1994;8(7):485-490.
340. Stamler J, Stamler R, Riedlinger WF, Algera G, Roberts RH. Hypertension screening of 1 million Americans. Community Hypertension Evaluation Clinic (CHEC) program, 1973 through 1975. *JAMA.* 1976;235:2299-2306.
341. Burt V, Whelton P, Roccella E, et al. Prevalence of hypertension in the US adult population: results from the Third National Health and Nutrition Examination Survey, 1988-1991. *Am Heart Assoc.* 1995;25:305-313.
342. Benjamin EJ, Blaha MJ, Chiuve SE, et al.; American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics-2017 update: a report from the American Heart Association. *Circulation.* 2017;135(10):e146-e603.
343. Engberding N, Wenger NK. Management of hypertension in women. *Hypertens Res.* 2012;35(3):251-260.
344. Roger VL, Go AS, Lloyd-Jones DM, et al.; American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Executive summary: heart disease and stroke statistics-2012 update: a report from the American Heart Association. *Circulation.* 2012;125(1):188-197.
345. Hilliard LM, Sampson AK, Brown RD, Denton KM. The "his and hers" of the renin-angiotensin system. *Curr Hypertens Rep.* 2013;15(1):71-79.
346. Sampson AK, Hilliard LM, Moritz KM, et al. The arterial depressor response to chronic low-dose angiotensin II infusion in female rats is estrogen dependent. *Am J Physiol Regul Integr Comp Physiol.* 2012;302(1):R159-R165.
347. Miller JA, Anacta LA, Cattran DC. Impact of gender on the renal response to angiotensin II. *Kidney Int.* 1999;55(1):278-285.
348. Colafella KM, Hilliard LM, Denton KM. Epochs in the depressor/pressor balance of the renin-angiotensin system. *Clin Sci (Lond).* 2016;130(10):761-771.
349. Phoon S, Howes LG. Forearm vasodilator response to angiotensin II in elderly women receiving candesartan: role of AT(2)- receptors. *J Renin Angiotensin Aldosterone Syst.* 2002;3(1):36-39.
350. Mirabito KM, Hilliard LM, Kett MM, et al. Sex- and age-related differences in the chronic pressure-natriuresis relationship: role of the angiotensin type 2 receptor. *Am J Physiol Renal Physiol.* 2014;307(8):F901-F907.
351. Ichiki T, Kambayashi Y, Inagami T. Molecular cloning and expression of angiotensin II type 2 receptor gene. *Adv Exp Med Biol.* 1996;396:145-152.
352. Xue Q, Xiao D, Zhang L. Estrogen regulates angiotensin II receptor expression patterns and protects the heart from ischemic injury in female rats. *Biol Reprod.* 2015;93(1):6.
353. Sanderink GJ, Artur Y, Schiele F, Gueguen R, Siest G. Alanine aminopeptidase in serum: biological variations and reference limits. *Clin Chem.* 1988;34(7):1422-1426.
354. Mueller PW, Phillips DL, Steinberg KK. Alanine aminopeptidase in serum: automated optimized assay, and effects of age, sex, smoking, and alcohol consumption in a selected population. *Clin Chem.* 1987;33(3):363-366.
355. Mizutani S, Yamada R, Kurauchi O, Ito Y, Narita O, Tomoda Y. Serum aminopeptidase A (AAP) in normal pregnancy and pregnancy complicated by pre-eclampsia. *Arch Gynecol.* 1987;240(1):27-31.
356. Hariyama Y, Itakura A, Okamura M, et al. Placental aminopeptidase A as a possible barrier of angiotensin II between mother and fetus. *Placenta.* 2000;21(7):621-627.



357. Gohar EY, Pollock DM. Sex-specific contributions of endothelin to hypertension. *Curr Hypertens Rep.* 2018;20(7):58.
358. Tamma G, Goswami N, Reichmuth J, De Santo NG, Valenti G. Aquaporins, vasopressin, and aging: current perspectives. *Endocrinology.* 2015;156(3):777-788.
359. Juul KV, Bichet DG, Nielsen S, Nørgaard JP. The physiological and pathophysiological functions of renal and extrarenal vasopressin V2 receptors. *Am J Physiol Renal Physiol.* 2014;306(9):F931-F940.
360. Clemmer JS, Faulkner JL, Mullen AJ, Butler KR, Hester RL. Sex-specific responses to mineralocorticoid receptor antagonism in hypertensive African American males and females. *Biol Sex Differ.* 2019;10(1):24.
361. Faulkner JL, Kennard S, Huby AC, et al. Progesterone predisposes females to obesity-associated leptin-mediated endothelial dysfunction via upregulating endothelial MR (Mineralocorticoid Receptor) expression. *Hypertension.* 2019;74(3):678-686.
362. Veiras LC, Girardi ACC, Curry J, et al. Sexual dimorphic pattern of renal transporters and electrolyte homeostasis. *J Am Soc Nephrol.* 2017;28(12):3504-3517.
363. Mirabito Colafella KM, Samuel CS, Denton KM. Relaxin contributes to the regulation of arterial pressure in adult female mice. *Clin Sci (Lond).* 2017;131(23):2795-2805.
364. Danielson LA, Kercher LJ, Conrad KP. Impact of gender and endothelin on renal vasodilation and hyperfiltration induced by relaxin in conscious rats. *Am J Physiol Regul Integr Comp Physiol.* 2000;279(4):R1298-R1304.
365. Chapman AB, Abraham WT, Zamudio S, et al. Temporal relationships between hormonal and hemodynamic changes in early human pregnancy. *Kidney Int.* 1998;54(6):2056-2063.
366. Anton L, Merrill DC, Neves LA, et al. The uterine placental bed Renin-Angiotensin system in normal and preeclamptic pregnancy. *Endocrinology.* 2009;150(9):4316-4325.
367. Brouwers L, van der Meiden-van Roest AJ, Savelkoul C, et al. Recurrence of pre-eclampsia and the risk of future hypertension and cardiovascular disease: a systematic review and meta-analysis. *BJOG.* 2018;125(13):1642-1654.
368. Moreau KL, Babcock MC, Hildreth KL. Sex differences in vascular aging in response to testosterone. *Biol Sex Differ.* 2020;11(1):18.
369. Reckelhoff JF. Androgens and blood pressure control: sex differences and mechanisms. *Mayo Clin Proc.* 2019;94(3):536-543.
370. Faulkner JL, Belin de Chantemèle EJ. Sex hormones, aging and cardiometabolic syndrome. *Biol Sex Differ.* 2019;10(1):30.
371. Sabbatini AR, Kararigas G. Estrogen-related mechanisms in sex differences of hypertension and target organ damage. *Biol Sex Differ.* 2020;11(1):31.
372. Oelkers WK. Effects of estrogens and progestogens on the renin-aldosterone system and blood pressure. *Steroids.* 1996;61(4):166-171.
373. Cobin RH, Goodman NF; AACE Reproductive Endocrinology Scientific Committee. American Association of Clinical Endocrinologists and American College of Endocrinology position statement on menopause-2017 update. *Endocr Pract.* 2017;23(7):869-880.
374. Gencer B, Mach F. Testosterone: a hormone preventing cardiovascular disease or a therapy increasing cardiovascular events? *Eur Heart J.* 2016;37(48):3569-3575.
375. Fuchs MM, Attenhofer Jost C, Babovic-Vuksanovic D, Connolly HM, Egbe A. Long-term outcomes in patients with Turner syndrome: a 68-year follow-up. *J Am Heart Assoc.* 2019;8(11):e011501.
376. Price WH, Clayton JF, Collyer S, De Mey R, Wilson J. Mortality ratios, life expectancy, and causes of death in patients with Turner's syndrome. *J Epidemiol Community Health.* 1986;40(2):97-102.
377. Schoemaker MJ, Swerdlow AJ, Higgins CD, Wright AF, Jacobs PA; United Kingdom Clinical Cytogenetics Group. Mortality in women with Turner syndrome in Great Britain: a national cohort study. *J Clin Endocrinol Metab.* 2008;93(12):4735-4742.
378. Gravholt CH, Viuff MH, Brun S, Stochholm K, Andersen NH. Turner syndrome: mechanisms and management. *Nat Rev Endocrinol.* 2019;15(10):601-614.
379. Accardo G, Amoresano Paglionico V, Di Fraia R, et al. Management of cardiovascular complications in Klinefelter syndrome patients. *Expert Rev Endocrinol Metab.* 2019;14(2):145-152.
380. Pasquali D, Arcopinto M, Renzullo A, et al. Cardiovascular abnormalities in Klinefelter syndrome. *Int J Cardiol.* 2013;168(2):754-759.
381. Bojesen A, Juul S, Birkebaek N, Gravholt CH. Increased mortality in Klinefelter syndrome. *J Clin Endocrinol Metab.* 2004;89(8):3830-3834.
382. Swerdlow AJ, Higgins CD, Schoemaker MJ, Wright AF, Jacobs PA; United Kingdom Clinical Cytogenetics Group. Mortality in patients with Klinefelter syndrome in Britain: a cohort study. *J Clin Endocrinol Metab.* 2005;90(12):6516-6522.
383. Huby RD, Graves P, Jackson R. The incidence of sexually dimorphic gene expression varies greatly between tissues in the rat. *Plos One.* 2014;9(12):e115792.
384. Mayne BT, Bianco-Miotto T, Buckberry S, et al. Large scale gene expression meta-analysis reveals tissue-specific, sex-biased gene expression in humans. *Front Genet.* 2016;7:183.
385. Kwekel JC, Vijay V, Desai VG, Moland CL, Fuscoe JC. Age and sex differences in kidney microRNA expression during the life span of F344 rats. *Biol Sex Differ.* 2015;6(1):1.
386. Kwekel JC, Desai VG, Moland CL, Vijay V, Fuscoe JC. Life cycle analysis of kidney gene expression in male F344 rats. *Plos One.* 2013;8(10):e75305.
387. Pan WH, Yeh WT, Hwu CM, Ho LT. Undiagnosed diabetes mellitus in Taiwanese subjects with impaired fasting glycemia: impact of female sex, central obesity, and short stature. *Chin J Physiol.* 2001;44(1):44-51.
388. Olivarius Nde F, Vestbo E, Andreasen AH, Mogensen CE. Renal involvement is related to body height in newly diagnosed diabetic women aged 40 years or over. *Diabetes Metab.* 2001;27(1):14-18.
389. Neugarten J, Silbiger SR. The impact of gender on renal transplantation. *Transplantation.* 1994;58(11):1145-1152.
390. Ishikawa I, Maeda K, Nakai S, Kawaguchi Y. Gender difference in the mean age at the induction of hemodialysis in patients with autosomal dominant polycystic kidney disease. *Am J Kidney Dis.* 2000;35(6):1072-1075.
391. Hannedouche T, Chauveau P, Kalou F, Albouze G, Lacour B, Jungers P. Factors affecting progression in advanced chronic renal failure. *Clin Nephrol.* 1993;39(6):312-320.

392. Coggins CH, Breyer Lewis J, Caggiula AW, Castaldo LS, Klahr S, Wang SR. Differences between women and men with chronic renal disease. *Nephrol Dial Transplant*. 1998;13(6):1430-1437.
393. Beale AL, Nanayakkara S, Segal L, et al. Sex differences in heart failure with preserved ejection fraction pathophysiology: a detailed invasive hemodynamic and echocardiographic analysis. *JACC Heart Fail*. 2019;7(3):239-249.
394. Turnbull F, Woodward M, Neal B, et al.; Blood Pressure Lowering Treatment Trialists' Collaboration. Do men and women respond differently to blood pressure-lowering treatment? Results of prospectively designed overviews of randomized trials. *Eur Heart J*. 2008;29(21):2669-2680.
395. Tadic M, Cuspidi C, Grassi G, Ivanovic B. Gender-specific therapeutic approach in arterial hypertension - challenges ahead. *Pharmacol Res*. 2019;141:181-188.
396. McDonough AA, Nguyen MT. Maintaining balance under pressure: integrated regulation of renal transporters during hypertension. *Hypertension*. 2015;66(3):450-455.
397. Kasai F, Hirayama N, Ozawa M, Iemura M, Kohara A. Changes of heterogeneous cell POPULATIONS in the Ishikawa cell line during long-term culture: proposal for an in vitro clonal evolution model of tumor cells. *Genomics*. 2016;107(6):259-266.
398. Yang DP, Rosanoff EI. Specific chromosome changes associated with rabbit cell lines cultured in vitro. *Cytogenet Cell Genet*. 1977;18(4):212-230.
399. Gebhard C, Regitz-Zagrosek V, Neuhauser HK, Morgan R, Klein SL. Impact of sex and gender on COVID-19 outcomes in Europe. *Biol Sex Differ*. 2020;11(1):29.
400. Jin JM, Bai P, He W, et al. Gender differences in patients with COVID-19: focus on severity and mortality. *Front Public Health*. 2020;8:152.
401. Kragholm K, Andersen MP, Gerds TA, et al. Association between male sex and outcomes of Coronavirus Disease 2019 (Covid-19) - a Danish nationwide, register-based study. *Clin Infect Dis*. Published online ahead of print July 8, 2020. doi:10.1093/cid/ciaa924
402. Kassotis CD, Vandenberg LN, Demeneix BA, Porta M, Slama R, Trasande L. Endocrine-disrupting chemicals: economic, regulatory, and policy implications. *Lancet Diabetes Endocrinol*. 2020;8(8):719-730.
403. Waxman DJ, Holloway MG. Sex differences in the expression of hepatic drug metabolizing enzymes. *Mol Pharmacol*. 2009;76(2):215-228.
404. Brehm E, Flaws JA. Transgenerational effects of endocrine-disrupting chemicals on male and female reproduction. *Endocrinology*. 2019;160(6):1421-1435.
405. De Vries GJ. Minireview: sex differences in adult and developing brains: compensation, compensation, compensation. *Endocrinology*. 2004;145(3):1063-1068.
406. Ichise H, Hori A, Shiozawa S, et al. Establishment of a tamoxifen-inducible Cre-driver mouse strain for widespread and temporal genetic modification in adult mice. *Exp Anim*. 2016;65(3):231-244.
407. Ye R, Wang QA, Tao C, et al. Impact of tamoxifen on adipocyte lineage tracing: Inducer of adipogenesis and prolonged nuclear translocation of Cre recombinase. *Mol Metab*. 2015;4(11):771-778.
408. Levy N, Paruthiyil S, Zhao X, et al. Unliganded estrogen receptor-beta regulation of genes is inhibited by tamoxifen. *Mol Cell Endocrinol*. 2010;315(1-2):201-207.



# Reflections on the Clinician's Role with Individuals Who Self-identify as Transgender

Stephen B. Levine<sup>1</sup> **Exhibit  
SL 08**Received: 12 December 2020 / Revised: 27 August 2021 / Accepted: 28 August 2021 / Published online: 15 September 2021  
© The Author(s) 2021, corrected publication 2021

## Abstract

The fact that modern patterns of the treatment of trans individuals are not based on controlled or long-term comprehensive follow-up studies has allowed many ethical tensions to persist. These have been intensifying as the numbers of adolescent girls declare themselves to be trans, have gender dysphoria, or are “boys.” This essay aims to assist clinicians in their initial approach to trans patients of any age. Gender identity is only one aspect of an individual's multifaceted identity. The contributions to the passionate positions in the trans culture debate are discussed along with the controversy over the official, not falsifiable, position that all gender identities are inherently normal. The essay posits that it is relevant and ethical to investigate the forces that may have propelled an individual to create and announce a new identity. Some of these biological, social, and psychological forces are enumerated. Using the adolescent patient as an example, a model for a comprehensive evaluation process and its goals are provided. The essay is framed within a developmental perspective.

**Keywords** Human identity · Sexual identity · Gender identity · Gender dysphoria · Ethics

## Introduction

This essay derives from my clinical experiences with individuals of all ages who have sought psychiatric care for their discomfort about their gender. I have been involved with these problems since 1973. The clinical process with adults is markedly different than with younger patients. With children and adolescents, the work is fraught with greater worry about outcome, legal uncertainty concerning consent, and ethical tensions. Larger issues are in play, however, with everyone who is contemplating gender change, requesting hormones, or wanting surgery. It is increasingly recognized that the long-term mental health outcomes of these interventions are not clear. Parents, who almost always state they “want the best for their child,” look to professionals for the best management approach based on science. The trouble is that current treatment patterns are far more dependent on fashion, politically influenced beliefs, and hope. This is often referred to as best clinical practices. The media has provocatively, if not sagely, termed the controversies about gender transition as a culture war. Its debates

are occurring at federal, state, and community levels and are increasingly taking place in courtrooms in the U.S. and the UK. The most common arena of intense disagreement is perhaps the least publicized one—within the family.

Many concepts about trans phenomena have evolved since the early 1970s when few mental health professionals had ever encountered a transsexual person (Pfäfflin, 2011). Psychiatric, psychological, medical, and nursing organizations continue to declare the efficacy of various forms of transition for emancipated adults. Similar pervasive endorsements did not exist for children and early adolescents where ethical concerns, policy, and science conspicuously clashed until 2018 when the American Academy of Pediatrics supported the social transition of grade school trans children and criticized watchful waiting (Rafferty, 2018): “The approach [watchful waiting] is also influenced by a group of early studies with validity concerns, methodologic flaws, and limited follow-up on children who identified as TGD [transgender and gender diverse] and, by adolescence, did not seek further treatment (“desisters”).”

Gender patients and their families often face excruciating dilemmas, some of which they feel but cannot articulately express. It is my hope that the following considerations might help clinicians to assist patients and their families with these situations.

✉ Stephen B. Levine  
sbl2@case.edu

<sup>1</sup> Department of Psychiatry, Case Western Reserve University,  
23425 Commerce Park, #104, Beachwood, OH 44122, USA

## Gender Identity Is One Element of Individual Identity

Erikson's (1968) body of work advanced the understanding of human development by introducing the concepts of age-expected developmental tasks, developmental lines, and virtue vs. failure labels for eight developmental phases of life. Success in the tasks of development, always individually varied because of familial and larger cultural influences, eventually created competence in the developmental lines of vocation, friendship and love, sexual behavior, stability of sexual identity, and self-management. He emphasized that how well previous tasks were accomplished determined when and how completely subsequent ones could be achieved. He proposed that psychiatric symptoms were generated by developmental failures.

Today's concepts of identity in general, and sexual identity in particular, are far more multifaceted than Erikson's descriptions (Stevens, 1983). Modern adult psychiatry has not emphasized adult development; it is preoccupied with symptom patterns and their treatment. Psychiatry recognizes trauma-induced dissociation, personality disorders (particularly borderline type), psychosis, and gender dysphoria as containing identity struggles. Child-oriented and psychodynamic therapists tend to be more attuned to developmental processes than those committed to treatment primarily based on DSM-5 diagnosis. The larger world understands identity in broader terms. Identity crises occur when individuals lose their jobs, retire, are widowed, get divorced, discover homosexual attraction or have their first affair, etc. There are numerous elements of human identity that can create crises. Here are some other elements: religion, ethnicity, economic status, intelligence, vocation, size (height/weight), athleticism, sense of attractiveness, sociability, political, and dietary. A consideration of an extended list of identity elements clarifies the dimensions of individuality and illuminates lives as multifaceted processes. Many of the aspects of identity are not clinically relevant at any particular time. National identity, for instance, may not be germane until one travels to another country or one is an immigrant. Racial identity heightens in the face of flagrant violations of individual rights. The number of identity elements in play at any given time is not as important a foundational concept as the idea that every person's sense of self is multifaceted.

Most elements of identity are:

1. Associated with unique values and sensibilities
2. Passionately held
3. The source of a person's personality development, relationships, and career
4. The explanation of individuality
5. Shapers of friendship patterns
6. Evolve from youth to old age, predictably or unpredictably, subtly or dramatically

7. Capable of enhancing, limiting, or destroying one's life.
8. The source of emotional and physiological symptoms because of intrapsychic or interpersonal conflict
9. A cursory statement of a larger subject

## Intersectionality

One academic gender identity topic that receives considerable attention is the intersectionality of identity components (Abed et al., 2019). For example, it is well known that the physical disease and mortality risks to poor black trans females with a high school education compared to wealthy white college educated trans women are far greater in terms of HIV infection (Baral et al., 2013). But when all the elements of a person's current identity are considered, the degree of intersectionality becomes far broader than what is usually emphasized. Intersectionality introduces the clinician to a paradox. It helps clinicians to view each trans patient as unique and to plan accordingly. When thinking about public health, political, legal, and civil rights, however, we then view trans communities as a unitary group.

## Transgender Phenomena Evoke Intense Countertransferences

Atypical gender presentations elicit strong responses in most individuals. This is perhaps less so today than decades ago, but opinions can still be intense and polarizing. Numerous factors contribute to their intensity making it difficult to discern which of these factors organize a person's viewpoint.

1. *Fascination* with sex and gender change. The question, "Can sex be changed?" has long been explored in the arts, where men and women have for centuries been presented as the opposite sex in humor, drama, dance, opera, and popular music. Today, it is better understood that, in a basic biological sense, sex cannot be changed, but gender presentation can, with or without medical assistance.
2. *Political sensibilities*. The political Right may consider transgenderism morally wrong and dangerous to societal health. Its approach to studies and clinical services is skepticism. The political Left may consider transgenderism the courageous pursuit of self-expression, a civil right, and another praiseworthy social movement to eliminate discrimination. Its approach to studies and clinical services is positive.
3. *Religious sensibilities*. Theological assumptions may resemble either political position. In the United States, Christian religions tend to lean to the political Right.
4. *Orientation sensibilities*. Membership in the heteronormative or sexual minority communities may influence unease with, or endorsement of, transgender phenomena.



5. *Intuitive sensibilities.* When people are neither religious nor political, they may have a “gut instinct” that one should be supportive or wary of trans phenomena. Such sensibilities are best reflected through age; younger and older people have different life experiences with which to be intuitive.

Professionals overlay their attitudes from the above forces with the aspiration to be morally, politically, and religiously neutral in their clinical work. Three additional factors may also contribute to their private reactions.

1. *Personal clinical experience.* Before the evaluative gatekeeping functions of mental health professionals were downgraded in the 7th edition of the Standards of Care by WPATH (World Professional Association for Transgender Health) (Coleman et al., 2011), clinicians occasionally encountered hostile adult patients who demanded hormones or a surgery recommendation. A disrespectful hostile patient tends to create clinical wariness toward future trans individuals. With WPATH’s policy change, gender specialists became wedded to affirmation. The frequency of unpleasant clinical experiences diminished when patients were efficiently given what they desired. Nonetheless, when an affirmed patient does not do well after affirmation, a medical or surgical intervention, clinicians may hesitate more with subsequent patients,

2. *Clinical reports from innovators.* Pioneering studies of transgender treatments were compassion-based attempts to improve the lives of adults with convincing long standing painful gender/sex incongruity. The seemingly largely successful interventions were felt to not require controlled studies. Such studies might have compared predetermined comprehensively outcomes of those given hormones or a particular surgery with those who were delayed or provided psychotherapy. Conviction about the efficacy of these increasingly popular interventions made it seem to be unethical to withhold hormones and surgery to those who desired them. Individual follow-up studies that were done tended to be of short duration, with a relatively small number of patients using differing outcome measures from study to study. Many individuals in some studies were lost-to-follow data. Nonetheless, the findings encouraged gender specialists about the helpfulness of transition, hormones, and surgery. Once clinicians facilitate any form of transition, they tend to believe they are rescuing patients from endless despair and enabling happy, successful, productive lives.

3. *Knowledge of scientific studies.* Many believe that science has already firmly established the ideal way to treat gender patients. Many institutions and clinicians ignore studies that do not support their preferred concepts. For example, high desistance rates in trans children have

been demonstrated in 11 of 11 studies (Cantor, 2020) but a committee of pediatricians created a policy of supporting transition of grade school children (Rafferty, 2018). One of these studies, recently published, reported follow-up of 139 Canadian boys, 63% who met criteria for gender identity disorder and 37% were subthreshold for the diagnosis. The study found that 88% had desisted at a mean age of 20.5 years (range, 13–39 years) (Singh et al., 2021). In 2020, three critiques of trans supportive interventions demonstrated that published scientific papers were flawed (Biggs, 2020; D’Angelo et al., 2021; Kalin, 2020). In 2020, a UK court put a halt to puberty blocking hormones and the use of cross-sex hormones for those under age of 16 and required 16- and 17-year-olds to individually have court approval before beginning hormones. (<https://www.judiciary.uk/judgements/r-on-the-application-of-quincey-bell-and-a-v-tavistock-and-portman-nhs-trust-and-others/>). By evidence-based medicine standards (Masic et al., 2008), it has long been clear that the quality of science underlying interventions is low (Byne et al., 2012). In an objective evaluation of relevant transgender Standards of Care, WPATH’s guidelines, which clinicians have long used to justify their care, was given poor scores on relevant domains (Dahlen et al., 2021).

The interplay of the above ten factors make every clinician and family a bit uncertain what the limits of knowledge are and why this topic creates partisan passions.

## What Is Sexual Identity?

In my view, childhood and early adolescent sexual identity is incompletely formed. Later adolescent and adult sexual identity consists of gender identity, orientation, and intention components (Levine, 1989). Each of the components has internal erotic and external behavioral dimensions. Answers to three questions define an individual’s private, psychological, conscious, erotic sexual identity components: When I think of myself in terms of maleness and femaleness, who am I (gender identity)? Which gender (with biological sex assumed) attracts me romantically and sexually (orientation)? What do I want to do with a partner’s body or have done to my body during sexual activity (intention)? Erotic dimensions are not necessarily reflected in the behavioral aspects of the three components. A masculine appearing boy may privately think he is a girl. A lesbian may have heteroerotic attractions and fantasies. A sexually conventionally behaving adult may have recurrent sadomasochistic desires.

The tripartite sexual identity portion of the self is not usually appreciated in transgender evaluations, clinical care, education, or research. Sexual orientation, which WPATH asserts to be entirely distinct from gender identity (Coleman et al., 2011),



has become less important in trans care because all sexual orientations are observed in trans populations and because a person's orientation may adapt with social opportunity (Diamond et al., 2017). From its inception, most research has ignored the intention component as though it has nothing to do with the development of the sexual self and has no influence on either the origins or evolution of gender identity or orientation at any time in life (Green, 1987; Zucker et al., 2016). An unknown percentage of trans individuals have conventional intentions, but when paraphilic interests are present, the individual's private sexual identity reflects this. A bisexual trans man who advertises himself as a submissive reflects all three dimensions of sexual identity.

### Is Transgenderism Maladaptive?

The many specific clinical, political, legal, and moral uncertainties concerning transgender phenomena ultimately stem from one underlying question: Is transgenderism an abnormality? The words “abnormality” and “psychopathology” seem to quickly move clinicians into camps and appear to some as politically incorrect (Levine & Solomon, 2009). “Is a trans identity maladaptive?” may be a somewhat less incendiary phrase. There seem to be almost three answers.

*It is not inherently maladaptive!* The official policy of the American Psychiatric Association (Byne et al., 2012) and other professional organizations is that all forms of gender identity are normal: “Being transgender or gender variant implies no impairment in judgment, stability, reliability, or general social or vocational capabilities.” Although relatively uncommon, trans binary and non-binary identities are viewed as manifestations of human developmental diversity. The argument is made that psychiatry considered gay and lesbian identities to be abnormal until 1974. Today, when this question is asked about trans people, it is skeptically viewed as the reinvention of past erroneous policies toward homosexual persons. The “No!” answer has found powerful expression in the ICD-11's renaming the diagnosis of Gender Dysphoria as Gender Incongruence and moving it from the Mental Disorders section into Factors Affecting Sexual Health (WHO, 2018). Asymptomatic individuals who are not distressed by their unconventional gender identities bolster the argument (Askevis-Leherpeux et al., 2019). Advocates of the ICD-11 change have stated its motivation to normalize is to diminish symptoms due to self-hatred and to lessen discrimination (Reed et al., 2016). Institutional declarations of normality have not been accompanied by its evidential basis.

*It is inherently maladaptive!* For a several decades, trans phenomena were considered developmental abnormalities. The evidence was suspiciously intuitive but was also based on the high prevalence and persistence of psychiatric symptoms (Mayer & McHugh, 2016). Cross-sectional studies of these

individuals, before and after social, hormonal, or surgical transitions have repeatedly affirmed this (Bränström & Pachankis, 2020a; Dhejne et al., 2016). The “Yes!” view assumes that the crystallization of trans identity is a well-intentioned, but unrealistic, solution to an unsatisfying family, interpersonal, biological, or intrapsychic environment. The new identity promises an escape—a temporary exhilarating rebirth that is fueled with intense passion. This view gains strength from health services research that describes trans populations as vulnerable groups in need of numerous protections (Liszewski et al., 2018). Data have demonstrated the need for continuing psychiatric assistance after surgical transformation (Bränström & Pachankis, 2020a, 2020b; Dhejne et al., 2011; Simonsen et al., 2016). This population's substance abuse rates, although rarely measured in trans outcome research, is known to be significantly elevated (Compton & Jones, 2021). If persistent disabling psychiatric symptoms with frequent suicidal ideation do not qualify as maladaptive, clinicians might wonder what does? Assumptions that all trans phenomena are maladaptive solutions to prior life adverse circumstances seem too extreme when highly functional otherwise asymptomatic transgender individuals are encountered.

*It is an irrelevant question!* This view asserts that changing social roles and modifying the body of trans people is the only way to eliminate the distress of incongruence. Since these treatments cure gender dysphoria, the relevant social issues are how to increase access through insurance coverage, better education of health care professionals, and reduce discrimination (Ard & Keuroghlian, 2018). This answer seems to position the civil rights of gender diverse individuals over other considerations.

### The Natural History of Transgender Lives Is Not Known

The question for any treatment is, “How does it alter the natural course of the condition?” “Natural history” means the typical untreated course of a condition. Is the problem self-limiting, does it leave a permanent deficit, or cause early disability or death? Dramatic treatments have been offered to trans patients over a 50-year period: support through affirmation, transitioning in society, cross-sex hormones, mastoplasty or mastectomies, genital reconstruction, orchiectomy, facial feminization surgeries, and lately puberty blocking hormones. The assumption has been that these treatments create superior outcomes compared to no treatment. However, no controlled study has tested any of these treatments nor has prospectively designed follow-up studies of those undergoing treatment been accomplished (Kalin, 2020). Bränström and Pachankis' (2020a) optimistic conclusions that claimed that transgender surgeries reduced subsequent mental health services utilization was retracted after seven critical letters to the editor and

two statisticians reanalyzed their data (Bränström & Pachankis, 2020a, 2020b).

What clinicians know must be distinguished from what they believe about the natural history and the effect of treatment on the course of trans' lives (Zucker, 2018). Psychiatric disorders are known to impair the quality of life. Clinicians should be concerned about what happens to these individuals as they move through their lives. There are only a few comprehensive national studies of this relevant question and these have worrisome results (Bränström, & Pachankis, 2020a, 2020b; Dhejne et al., 2011; Simonsen et al., 2016). In its place numerous cross-sectional studies converge on the understanding that trans communities fare less well than the general populations along many important dimensions.

Disagreements arise when these differences are explained. The minority stress hypothesis asserts that the psychiatric co-morbidities derive from social stigma that originates both in families and the culture. Young people internalize a negative attitude in the form of self-castigation, which is labeled transphobia. Transphobia is analogous to internalized homophobia within some gays and lesbians. This hypothesis is only controversial because some proponents invoke it as the only explanation of the co-morbidities. There must be other sources as well, as cis individuals also have similar but less prevalent mental problems. Incongruence itself is difficult to bear; the deeply felt aspiration to change gender expression is not fully possible, trans people have their own fears about the social, sexual functional, and relational costs of transition, and the transitions do not necessarily create lasting worry-free self-confidence in their new gender identity. When patients appear to be mentally ill or functionally impaired, clinicians confront the paradox between the policy that there is no psychopathology inherent in any trans gender form and the patient in front of them, WPATH provided a way around the paradox: "if significant physical or mental health concerns are present, they should be reasonably well controlled" (Coleman et al., 2011, p. 34). "Reasonably well controlled," however, is a subjective appraisal by individual clinicians (Janssen et al., 2019). While professionals employ the term co-morbidity, our understanding of how they relate to one another—entirely separate or vitally interconnected—remains poor. Who can assert with clinical certainty that an individual's symptom pattern and functional impairments have nothing to do with what the patient is trying to achieve? A survey of European endocrinologists reported ethical discomfort from not knowing the answers to fundamental questions about their adolescent patients, including "Is a trans identity a normal phenomenon?" (Vrouenraets et al., 2015). It is not unreasonable to worry about the long-term outcomes.

## Gender Dysphoria May Appear Anywhere in the Life Cycle

Some children express discomfort with their assigned gender and manifest strong cross-gender interests as early as age three. Dramatically increasing numbers of adolescents, particularly girls who never before expressed interest in or manifested cross-gender behavior are now declaring a trans identity (Nieder et al., 2011). Late adolescents and young adults who thought of themselves as gay, polyamorous, or kink may later consolidate a trans identity. Heterosexual men who long have been sexually aroused by female garments may announce that they are trans in mid-life. Inmates in male and female prisons, many of whom were bisexually behaving adolescents, are increasingly declaring themselves to be transgendered (Levine, 2016). Rarely, a person over age 60 who never recognized any homosexual or paraphilic interest or behavior changes gender. While the modal age of onset is decreasing in many countries (de Vries & Cohen-Kettenis, 2012; Eisenberg et al., 2018), gender identity, orientation, and intention can evolve throughout life (Diamond et al., 2017; Friedman & Downey, 2010; Lawrence, 2013).

## It Is Relevant to Consider "Why Now?"

Whenever trans identities emerge, many of the patients feel a drivenness to express themselves in ways that often make them and their family uneasy. Family members, clinicians, and an occasional patient ask, "Why is this occurring now?" Posing this question is a principle of good clinical management for any new symptom, for example, asking what occurred that precipitated a depressive state. Many affirmative therapists find this question to be irrelevant and unethical because of the greater need to respect patient autonomy. They may offer the idea that a trans person, at any age, knows best what is needed. It is worth recalling that today's passion can be tomorrow's regret. Making a diagnosis of gender dysphoria is easy. Thinking about what it is a response to is not.

## Causal Models of Gender Dysphoria (Incongruence)

Because the mechanisms of production of gender incongruence are not scientifically established, clinicians may explain the phenomena with their preferred assumptions. The ethical issue is how the clinicians' beliefs are represented to patients, families, and colleagues.

Some assume that the cause of a trans identity is ultimately from combinations of genetics, neural development, prenatal hormones (Roselli, 2018) or post-natal environmental-induced gene expression. A more interactive nature-nurture explanation is illustrated by the elevated incidence of gender dysphoria

among the autistic (Leef et al., 2019; Mahfouda et al., 2019). Autism is understood to be primarily the result of embryonic processes on brain development (Estes et al., 2019). The condition often generates social isolation, unusual interests, and rigid idiosyncratic thinking. These impairments may predispose patients to a pervasive discomfort with the self and intense degrees of loneliness, which eventually generates a hopeful search for relief through changing gender expression. A third group of explanations involve processes that may begin with poor early life bonding that leaves the youngster nervous, unconfident, or unwilling to be like a particular parent. A separation from a parent, either literally or emotionally, seems to be an inciting factor in some children and teens. At times a failure to separate from mother seems germane (Coates & Person, 1985). Trans children are over represented among runaways, those in foster care, and among adoptees (Salazar et al., 2018; Shumer et al., 2017; Zucker & Bradley, 1998). The prevalence of trans identities in prisons is much higher than in the general population (Osborne & Lawrence, 2016); inmates often have profoundly disruptive early life histories. Most child victims of egregious levels of physical, verbal, and sexual abuse and/or parental neglect do not become trans, but those who do in childhood or adulthood raise the question whether trans identity is simply an unusual outcome of common adversities.

Adolescent onset of gender dysphoria must bear some relationship to puberty when the body is changing, sexual drive appears, and awareness of social interactions and social status are heightened. One cannot discount the pervasive influence of the Internet in influencing current adolescents. Most adolescents undergo psychological strains and stresses that are only partially understandable to them. It may be possible that some adolescents who declare a trans identity are responding to ordinary developmental angst in an extraordinary manner. Some may be attracted to the cause of improving the world through expanding notions of gender. New declarations of a trans identity among early adolescents might also be understood as part of the search for how to define the self rather than the final resolution of this search (Littman, 2018). This hypothesis is in keeping with the view of adolescence that encompasses a conflictual search for a consistent sexual sense of the self (Blos, 1962; Erikson, 1968). In the light of current knowledge (Kendler, 2019), it seems unwise to assume that there is one etiology for these phenomena.

## One View of an Evaluation

While there have been reports of psychotherapeutic approaches to trans children and adolescents (Evans & Evans, 2021), the vast majority of the recent literature on management of these patients emphasizes the importance of affirmation, support for transition, diminishing internalized transphobia, and optimism about having a fulfilling life in what is labeled the authentic

gender. Some advocates have declared the topic of trans care to be under researched (Winter et al., 2016). This idea relates less to the explosive number of articles being published (Sweileh, 2018), and more to the relevant unanswered questions about the efficacy of the well-known treatments and alternative approaches. The evaluation process that precedes affirmative social and medical support focuses on the criteria of the diagnosis and screening for conspicuous mental illness (Coleman et al., 2011). This represents an almost singular intense focus on gender identity as though other aspects of identity and function are irrelevant. Today, the diagnosis of gender dysphoria generates such management for older teens and adults in as little as one session, as reported to me by numerous patients and families.

Using the adolescent patient as one example, I want to discuss another approach. Any approach is modifiable based on factors such as, where the family resides, their economic resources, their structure, custody of the patient, the degree of emancipation, and previous transition. Evaluation is a bit of a misnomer as the process I am describing is also educative.

## Duration and Elements of the Process

For out of town evaluations, two days provide an ample opportunity. The evaluation begins with a joint session with patient, parents, and siblings and is followed by separate processes, including psychological testing. The first meeting with the patient generally lasts two hours, a third meeting the next day lasts an hour. Parents are seen for two hours and offered a chance to meet again the following day. Siblings are seen for an hour. We also like to have a 50-min educational session about gender dysphoria and the state of science with the family.

For in town families, the evaluation can be spread out to gain the advantage of seeing the patient and family in different mood states and after the initial anxiety somewhat dissipates. The time slots are the same, although more time can be taken with the patient and the parents if it is deemed necessary. The educational session is done prior to the final formal session for recommendations and treatment planning. The final meeting usually requires 45–60 min. The parents choose whether the siblings attend.

## Professionals Involved

One professional is the primary evaluator, with others playing defined roles. The primary evaluator and the professional who will spend the majority of time with either the patient or the parents are present at the initial and final family meetings. The initial session clarifies the family's expectations, reviews the process, and provides an overview of sequence of events that led to the evaluation. It often reveals layers of conflict between the patient and parents and between the parents. Other therapists

can meet with the siblings to ascertain their views of the family circumstances, their worries about and support of the patient. The participation of these additional professionals necessitates a professionals-only meeting to create a consensus about the relevant issues.

### Subject Matter for Inquiry

One cannot expect a teen of any age to provide a comprehensive developmental history. Parents can share the circumstances of the pregnancy, the health of the pregnancy and post partum period, and the developmental sequences of their child's life. This includes the child's challenges, previous physical and psychological treatments, characteristic patterns, quality of relationships with each family member, and behavioral and verbal manifestations concerning gender nonconformity. The patient can provide the vital subjective narrative about the development of gender identity and can share concepts about personal orientation and intention, sexual involvement with others, what has been learned from the Internet, fears about their trans identity, and what they desire for their future. Siblings often illuminate other relevant aspects both about parents and the patient. The goal is to reveal an accurate picture of the patient's capacities, accomplishments, developmental challenges, symptom patterns, and motives for and degrees of gender incongruence.

### Concepts to be Communicated

Professional values are communicated to the family. Some of these are stated in the initial meeting with the family. They are repeated or introduced when it is apparent that one or more of the family members do not yet grasp them.

1. We aim to reestablish or to maintain the family's bond to one another (in most instances). Parents and patient are not to reject one another.
2. Parents are not the trans teen's enemy when they express concerns about their offspring's future; they have the right and responsibility to do so. The patient may be too young, unwilling, or unable to verbalize his or her concerns about the new identity. The parents may be expressing what the patient actually thinks, but is unable to say.
3. The adolescent is in charge of determining his or her gender identity, now and in the future.
4. It is important to identify and discuss the forces that moved the teen in the direction of a new identity.
5. Humans always have ambivalence about major life changes even when they deny it.

### Types of Recommendations

We begin the final session by asking the family members how they view what has occurred. Parents are usually relieved about what has been revealed. The patients often say that the process increased their self-awareness and that they appreciate being recognized as having more dimensions than just gender identity. Most forcefully add that they are not abandoning their trans identity.

The adolescent patient and family circumstances vary considerably. The evaluation seeks to clarify many aspects of the patient's identity as well as the patient's past and current developmental challenges. Our recommendations begin with the identified mental health issues. These often include: separation anxiety (particularly for boys), social anxiety (most intense among those with autism), dislike of a parent or parents (particularly among divorced and chronically dysfunctional parents), depression and anxiety about peer relationships, suicidality, paraphilic excitements, substance dependence, eating disorders, other identity conflicts, and autistic traits. The idea that "I am simply trans," is viewed as either a defense against understanding what has been going on within the person and within the family or simply a lack of understanding.

We do not recommend puberty blocking hormones and think it is prudent not to initiate cross-sex hormones prior to age 18. As many state that they desire hormones, we want to clarify what they hope the benefits will be now and in the future. We recommend an informed consent process for those seriously considering endocrine therapy. This consists of extended discussions to consider what is known about the medical, social, relational, and psychological risks of transition with or without hormones (Levine, 2019). We emphasize that this subject should not be covered quickly with a surrogate document or video. Some patients, however, come to the evaluation surreptitiously on hormones.

We recognize the vital importance of the patient's gender identity and its impact on the future of the entire family. We want to maximize the patient's ability to meaningfully address the identified problems and to increase the chance for success if the patient persists over time in the current gender identity. For local patients we offer our staff for psychiatric and psychotherapy services. We share our view that, despite our experience with this problem, it is the team of parents and patient, not the professional staff, who will have to discern if and when further transition is to occur. We recommend that they consider our findings at home over time. Regardless of their decisions, we ask for at least one follow-up session in three months in person, virtually, or by email.



## Final Report

If the family desires, the primary evaluator will issue a report for their use in the future. The report will have input from each of the involved professionals. It is particularly recommended for those coming from out of town.

## A Concluding Observation

The gender revolution has taught that there are more than two possible gender outcomes (Levine, 2020). The transsexuals of the 1960–1990s are increasingly the non-binary people of today (Motmans et al., 2019). Bodily discomforts and sense of not liking one's sex have always existed in some individuals, but now there are new cultural options to deal with these discomforts. Increasing numbers of older trans adolescents and young adults are labeling themselves as genderqueer, gender fluid, pangender, third gender, hybrid gender, and more. These terms recognize gender identity as a developmental process and appreciate that some trans identified persons will not use hormones or obtain surgery (Bränström & Panchankis, 2020a; Nieder et al., 2020) and some will think of themselves as a person with a trans past (Levine, 2018; Littman, 2018). I imagine Erikson would be pleased to know that some trans people recognize he was right in emphasizing that development was a continuing process throughout life.

**Funding** The author did not receive support from any organization for the submitted work.

## Declarations

**Conflict of interest** The author has no conflict of interest to declare that are relevant to the content of this article. This essay did not require approval from an IRB.

**Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

## References

Abed, E. C., Schudson, Z. C., Gunther, O. D., Beischel, W. J., & van Anders, S. M. (2019). Sexual and gender diversity among sexual

- and gender/sex minorities: Insights via sexual configurations theory. *Archives of Sexual Behavior*, 48(5), 1423–1441. <https://doi.org/10.1007/s10508-018-1340-2>
- Ard, K. L., & Keuroghlian, A. S. (2018). Training in sexual and gender minority health—expanding education to reach all clinicians. *New England Journal of Medicine*, 379(25), 2388–2391. <https://doi.org/10.1056/NEJMp1810522>
- Askevis-Leherpeux, F., de la Chenelière, M., Baleige, A., Chouchane, S., Martin, M. J., Robles-García, R., Fresán, A., Quach, A., Stona, A. C., Reed, G., & Roelandt, J. L. (2019). Why and how to support depsychiatrisation of adult transidentity in ICD-11: A French study. *European Psychiatry*, 59, 8–14. <https://doi.org/10.1016/j.eurpsy.2019.03.005>
- Baral, S. D., Poteat, T., Strömdahl, S., Wirtz, A. L., Guadamuz, T. E., & Beyrer, C. (2013). Worldwide burden of HIV in transgender women: A systematic review and meta-analysis. *The Lancet Infectious Diseases*, 13(3), 214–222. [https://doi.org/10.1016/S1473-3099\(12\)70315-8](https://doi.org/10.1016/S1473-3099(12)70315-8)
- Biggs, M. (2020). Puberty blockers and suicidality in adolescents suffering from gender dysphoria [Letter to the Editor]. *Archives of Sexual Behavior*, 49(7), 2227–2229. <https://doi.org/10.1007/s10508-020-01743-6>
- Blos, P. (1962). *On adolescence: A psychoanalytic interpretation*. Free Press.
- Bränström, R., & Panchankis, J. E. (2020a). Reduction in mental health treatment utilization among transgender individuals after gender-affirming surgeries: A total population study. *American Journal of Psychiatry*, 177(8), 727–734. <https://doi.org/10.1176/appi.ajp.2019.19010080>
- Bränström, R., & Panchankis, J. E. (2020b). Toward rigorous methodologies for strengthening causal inference in the association between gender-affirming care and transgender individuals' mental health: Response to letters [Letter to the Editor]. *American Journal of Psychiatry*, 177(8), 769–772. <https://doi.org/10.1176/appi.ajp.2020.20050599>
- Byne, W., Bradley, S. J., Coleman, E., Eyler, A. E., Green, R., Menvielle, E. J., Meyer-Bahlburg, H. F. L., Pleak, R. R., & Tompkins, D. A. (2012). Report of the American Psychiatric Association Task Force on Treatment of Gender Identity Disorder. *Archives of Sexual Behavior*, 41(4), 759–796. <https://doi.org/10.1007/s10508-012-9975-x> PMID: 22736225.
- Cantor, J. M. (2020). Transgender and gender diverse children and adolescents: Fact-checking of AAP Policy. *Journal of Sex & Marital Therapy*, 46(4), 307–313. <https://doi.org/10.1080/0092623X.2019.1698481>
- Coates, S., & Person, E. S. (1985). Extreme boyhood femininity: Isolated behavior or pervasive disorder? *Journal of the American Academy of Child Psychiatry*, 24(6), 702–709. [https://doi.org/10.1016/s0002-7138\(10\)60113-6](https://doi.org/10.1016/s0002-7138(10)60113-6)
- Coleman, E., & Bockting, W. (2011). Standards of care for the health of transsexual, transgender, and gender nonconforming people. *International Journal of Transgenderism*, 13, 165–232. <https://doi.org/10.1080/15532739.2011.700873>
- Compton, W. M., & Jones, C. M. (2021). Substance use among men who have sex with men. *New England Journal of Medicine*, 385(4), 352–356. <https://doi.org/10.1056/NEJMr2033007>
- Dahlen, S., Connolly, D., Arif, I., Junejo, M. H., Bewley, S., & Meads, C. (2021). International clinical practice guidelines for gender minority/trans people: Systematic review and quality assessment. *British Medical Journal Open*, 11(4), e048943. <https://doi.org/10.1136/bmjopen-2021-048943>
- D'Angelo, R., Sylrnluk, E., Ayad, S., Marchiano, L., Kenny, D. T., & Clarke, P. (2021). One size does not fit all: In support of psychotherapy for gender dysphoria [Letter to the Editor]. *Archives of Sexual Behavior*, 50(1), 7–16. <https://doi.org/10.1007/s10508-020-01844-2>

- de Vries, A. L. C., & Cohen-Kettenis, P. T. (2012). Clinical management of gender dysphoria in children and adolescents: The Dutch approach. *Journal of Homosexuality*, 59(3), 301–320. <https://doi.org/10.1080/00918369.2012.653300>
- Dhejne, C., Lichtenstein, P., Boman, M., Johansson, A. L., Långström, N., & Landén, M. (2011). Long-term follow-up of transsexual persons undergoing sex reassignment surgery: Cohort study in Sweden. *PLoS ONE*, 6(2), e16885. <https://doi.org/10.1371/journal.pone.0016885>
- Dhejne, C., Van Vlerken, R., Heylens, G., & Arcelus, J. (2016). Mental health and gender dysphoria: A review of the literature. *International Review of Psychiatry*, 28(1), 44–57. <https://doi.org/10.3109/09540261.2015.1115753>
- Diamond, L. M., Dickenson, J. A., & Blair, K. L. (2017). Stability of sexual attractions across different timescales: The roles of bisexuality and gender. *Archives of Sexual Behavior*, 46(1), 193–204. <https://doi.org/10.1007/s10508-016-0860-x>
- Eisenberg, M. E., Mehus, C. J., Saewyc, E. M., Corliss, H. L., Gower, A. L., Sullivan, R., & Porta, C. M. (2018). Helping young people stay afloat: A qualitative study of community resources and supports for LGBTQ adolescents in the United States and Canada. *Journal of Homosexuality*, 65(8), 969–989. <https://doi.org/10.1080/00918369.2017.1364944>
- Erikson, E. H. (1968). *Identity, youth, and crisis*. Norton.
- Estes, A., St. John, T., & Dager, S. R. (2019). What to tell a parent who worries a young child has autism. *JAMA Psychiatry*, 76(10), 1092–1093. <https://doi.org/10.1001/jamapsychiatry.2019.1234>
- Evans, S., & Evans, M. (2021). *Gender dysphoria: A therapeutic model for working with children, adolescents, and young adults*. Oxfordshire: Phoenix Publications.
- Friedman, R. C., & Downey, J. I. (2010). Male and female homosexuality in heterosexual life. In S. B. Levine, C. B. Risen, & S. E. Althof (Eds.), *Handbook of clinical sexuality for mental health professionals* (Second ed., pp. 369–381). New York: Routledge.
- Green, R. (1987). *The “sissy boy syndrome” and the development of homosexuality*. New Haven, CT: Yale University Press. <https://www.judiciary.uk/judgements/r-on-the-application-of-quincey-bell-and-a-v-tavistock-and-portman-nhs-trust-and-others/>
- Janssen, A., Busa, S., & Wernick, J. (2019). The complexities of treatment planning for transgender youth with co-occurring severe mental illness: A literature review and case study. *Archives of Sexual Behavior*, 48(7), 2003–2009. <https://doi.org/10.1007/s10508-018-1382-5>
- Kalin, N. H. (2020). Reassessing mental health treatment utilization reduction in transgender individuals after gender-affirming surgeries: A comment by the Editor on the process [Letter to the Editor]. *American Journal of Psychiatry*, 177(8), 764. <https://doi.org/10.1176/appi.ajp.2020.20060803>
- Kendler, K. S. (2019). From many to one to many—the search for causes of psychiatric illness. *JAMA Psychiatry*, 76(10), 1085–1091. <https://doi.org/10.1001/jamapsychiatry.2019.1200>
- Lawrence, A. A. (2013). *Men trapped in men’s bodies: Narratives of autogynephilic transsexualism*. New York: Springer.
- Leef, J. H., Brian, J., VanderLaan, D. P., Wood, H., Scott, K., Lai, M. C., Bradley, S. J., & Zucker, K. J. (2019). Traits of autism spectrum disorder in school-aged children with gender dysphoria: A comparison to clinical controls. *Clinical Practice in Pediatric Psychology*, 7(4), 383–395. <https://doi.org/10.1037/cpp0000303>
- Levine, S. B. (1989). *Sex is not simple*. Columbus, OH: Ohio Psychology Publications.
- Levine, S. B. (2016). Reflections on the legal battles over prisoners with gender dysphoria. *Journal of the American Academy of Psychiatry and the Law*, 44(2), 236–245.
- Levine, S. B. (2018). Transitioning back to maleness. *Archives of Sexual Behavior*, 47(4), 1295–1300. <https://doi.org/10.1007/s10508-017-1136-9>
- Levine, S. B. (2019). Informed consent for transgendered patients. *Journal of Sex & Marital Therapy*, 45(3), 218–229. <https://doi.org/10.1080/0092623X.2018.1518885>
- Levine, S. B. (2020). *Psychotherapeutic approaches to sexual problems: An essential guide for mental health professionals*. Washington, DC: American Psychiatric Association Publications.
- Levine, S. B., & Solomon, A. (2009). Meanings and political implications of “psychopathology” in a gender identity clinic: A report of 10 cases. *Journal of Sex & Marital Therapy*, 35(1), 40–57. <https://doi.org/10.1080/00926230802525646>
- Liszewski, W., Peebles, J. K., Yeung, H., & Arron, S. (2018). Persons of nonbinary gender—awareness, visibility, and health disparities. *New England Journal of Medicine*, 379(25), 2391–2393. <https://doi.org/10.1056/NEJMp1812005>
- Littman, L. (2018). Parent reports of adolescents and young adults perceived to show signs of a rapid onset of gender dysphoria. *PLoS ONE*, 13(8), e0202330. <https://doi.org/10.1371/journal.pone.0202330>
- Mahfouda, S., Panos, C., Whitehouse, A., Thomas, C. S., Maybery, M., Strauss, P., Zepf, F. D., O’Donovan, A., van Hall, H. W., Saunders, L. A., Moore, J. K., & Lin, A. (2019). Mental health correlates of autism spectrum disorder in gender diverse young people: Evidence from a specialised child and adolescent gender clinic in Australia. *Journal of Clinical Medicine*, 8(10), 1503. <https://doi.org/10.3390/jcm8101503>
- Masic, I., Miokovic, M., & Muhamedagic, B. (2008). Evidence based medicine—new approaches and challenges. *Acta Informatica Medica*, 16, 219–225. <https://doi.org/10.5455/aim.2008.16.219-225>
- Mayer, L. S., & McHugh, P. R. (2016). Sexuality and gender: Findings from the biological, psychological, and social sciences. *The New Atlantis*, 50, 10–143.
- Motmans, J., Nieder, T. O., & Bouman, W. P. (2019). Transforming the paradigm of nonbinary transgender health: A field in transition. *International Journal of Transgenderism*, 20(2–3), 119–125. <https://doi.org/10.1080/15532739.2019.1640514>
- Nieder, T. O., Eyssel, J., & Köhler, A. (2020). Being trans without medical transition: Exploring characteristics of trans individuals from Germany not seeking gender affirmative medical interventions. *Archives of Sexual Behavior*, 49(7), 2661–2672. <https://doi.org/10.1007/s10508-019-01559-z>
- Nieder, T. O., Herff, M., Cerwenka, S., Preuss, W. F., Cohen-Kettenis, P. T., De Cuypere, G., Haraldsen, I. R. H., & Richter-Appelt, H. (2011). Age of onset and sexual orientation in transsexual males and females. *Journal of Sexual Medicine*, 8(3), 783–791. <https://doi.org/10.1111/j.1743-6109.2010.02142.x>
- Osborne, C. S., & Lawrence, A. A. (2016). Male prison inmates with gender dysphoria: When is sex reassignment surgery appropriate? *Archives of Sexual Behavior*, 45(7), 1649–1663. <https://doi.org/10.1007/s10508-016-0700-z>
- Pfäfflin, F. (2011). Remarks on the history of the terms identity and gender identity. *International Journal Transgenderism*, 13(1), 13–25.
- Rafferty, J., Committee on Psychosocial Aspects of Child and Family Health; Committee on Adolescence; Section on Lesbian, Gay, Bisexual, and Transgender Health and Wellness. (2018). *Pediatrics*, 142(4), e20182162. <https://doi.org/10.1542/peds.2018-2162>
- Reed, G. M., Drescher, J., Krueger, R. B., Atalla, E., & Cochran, S. D. (2016). Disorders related to sexuality and gender identity in the ICD-11: Revising the ICD-10 classification based on current scientific evidence, best clinical practices, and human rights considerations. *World Psychiatry*, 15(3), 205–221. <https://doi.org/10.1002/wps.20354>
- Roselli, C. E. (2018). Neurobiology of gender identity and sexual orientation. *Journal of Neuroendocrinology*, 30(7), e12562. <https://doi.org/10.1111/jne.12562>
- Salazar, A. M., McCowan, K. J., Cole, J. J., Skinner, M. L., Noell, B. R., & Colito, J. M. (2018). Developing relationship-building tools for

- foster families caring for teens who are LGBTQ2S. *Child Welfare*, 96(2), 75–97.
- Shumer, D. E., Abbrha, A., Feldman, H. A., & Carswell, J. (2017). Overrepresentation of adopted adolescents at a hospital-based gender dysphoria clinic. *Transgender Health*, 2(1), 76–79. <https://doi.org/10.1089/trgh.2016.0042>
- Simonsen, R. K., Giraldi, A., Kristensen, E., & Hald, G. M. (2016). Long-term follow-up of individuals undergoing sex reassignment surgery: Psychiatric morbidity and mortality. *Nordic Journal of Psychiatry*, 70(4), 241–247. <https://doi.org/10.3109/08039488.2015.1081405>
- Singh, D., Bradley, S. J., & Zucker, K. J. (2021). A follow-up study of boys with gender identity disorder. *Frontiers in Psychiatry*, 12, 632784. <https://doi.org/10.3389/fpsy.2021.632784>
- Stevens, R. (1983). *Erik Erikson: An introduction*. St. Martin's Press.
- Sweileh, W. M. (2018). Bibliometric analysis of peer-reviewed literature in transgender health (1900–2017). *BMC International Health and Human Rights*, 18(1), 16. <https://doi.org/10.1186/s12914-018-0155-5>
- Vrouenraets, L. J., Fredriks, A. M., Hannema, S. E., Cohen-Kettenis, P. T., & de Vries, M. C. (2015). Early medical treatment of children and adolescents with gender dysphoria: An empirical ethical study. *Journal of Adolescent Health*, 57(4), 367–373. <https://doi.org/10.1016/j.jadohealth.2015.04.004>
- WHO. (2018). *11th revision, International classifications of diseases: Conditions related to sexual health*. <http://id.who.int/icd/entity/577470983>
- Winter, S., Diamond, M., Green, J., Karasic, D., Reed, T., Whittle, S., & Wylie, K. (2016). Transgender people: Health at the margins of society. *Lancet*, 388(10042), 390–400. [https://doi.org/10.1016/S0140-6736\(16\)00683-8](https://doi.org/10.1016/S0140-6736(16)00683-8)
- Zucker, K. J. (2018). The myth of persistence: Response to “A critical commentary on follow-up studies and ‘desistance’ theories about transgender and gender non-conforming children” by Temple Newhook et al. (2018). *International Journal of Transgenderism*, 19, 231–245. <https://doi.org/10.1080/15532739.2018.1468293>. p13
- Zucker, K. J., & Bradley, S. J. (1998). Adoptee overrepresentation among clinic-referred boys with gender identity disorder. *Canadian Journal of Psychiatry*, 43(10), 1040–1043. <https://doi.org/10.1177/070674379804301011>
- Zucker, K. J., Lawrence, A. A., & Kreukels, B. P. (2016). Gender dysphoria in adults. *Annual Review of Clinical Psychology*, 12, 217–247. <https://doi.org/10.1146/annurev-clinpsy-021815-093034>

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.



## Exhibit SL 09

July 2, 2021

# One Year Since Finland Broke with WPATH "Standards of Care"

*Finland prioritizes psychotherapy over hormones, and rejects surgeries for gender-dysphoric minors*

A year ago, the Finnish Health Authority (PALKO/COHERE) deviated from WPATH's "Standards of Care 7," by issuing new guidelines that state that psychotherapy, rather than puberty blockers and cross-sex hormones, should be the first-line treatment for gender-dysphoric youth. This change occurred following a systematic evidence review, which found the body of evidence for pediatric transition inconclusive.

Although pediatric medical transition is still allowed in Finland, the guidelines urge caution given the unclear nature of the benefits of these interventions, largely reserving puberty blocker and cross-sex hormones for minors with early-childhood onset of gender dysphoria and no co-occurring mental health conditions. Surgery is not offered to those <18. Eligibility for pediatric gender reassignment is being determined on a "case-by-case basis" in two centralized gender dysphoria research clinics.

The qualifying criteria for gender reassignment of youth, articulated in the 2020 Finnish treatment guidelines, are consistent with the original Dutch protocol, but represent a significant tightening of the more recent practices promoted by WPATH. WPATH Standards of Care 7 (SOC7) allows for hormones and surgery to be offered to youth with a pubertal-onset of gender dysphoria which is frequently complicated by mental health problems or neurocognitive comorbidities (such as ADHD and autism-spectrum disorders), following only a cursory assessment. Assessments by mental health professionals can be bypassed altogether according to the "informed consent model" of care endorsed by WPATH SOC7.

The Finnish guidelines warn of the uncertainty of providing any irreversible "gender-affirming" interventions for those 25 and under, due to the lack of neurological maturity. The guidelines also raise the concern that puberty blockers may negatively impact brain maturity and impair the young person's ability to provide informed consent to the subsequent and more irreversible parts of the Dutch protocol: cross-sex hormones and surgeries.

The Finnish guidelines reflect the growing international concern about the unexplained sharp rise in adolescents presenting with gender dysphoria, which is occurring in increasingly complex [developmental](#) and [mental health](#) contexts, and often without a childhood history of gender-related distress. There are significant questions as to whether the Dutch protocol (hormonal and surgical interventions for youth), designed for a distinctly different population of high-functioning teens with childhood-onset cross-sex identification and with no significant mental health comorbidities, is appropriate for this novel population.



The guidelines reference a recent [Finnish study](#), which noted that adolescents who were high functioning before cross-sex hormones continued to do well after, but those who had "*psychiatric treatment needs or problems in school, peer relationships and managing everyday matters outside of home continued to have problems.*" The study concluded that "*medical gender reassignment is not enough to improve functioning and relieve psychiatric comorbidities.*"

The guidelines also mentioned that a [key study](#) on puberty blockers, which utilized a comparison group of waitlisted adolescents, failed to show a statistically significant difference between the treated and waitlisted groups at the study end-period at 18 months. Although in the abstract of that study, the authors chose to highlight the small improvements in the puberty-blocked group at 12 months, the actual study conclusion – which remains behind a paywall and hidden to most readers – showed that by 18 months, [no significant differences could be found](#).

The Finnish Health Authority states that the guidelines will not be further revised until research is able to: explain the recent sharp rise in adolescents presenting with gender dysphoria; determine whether transgender identities in this population are stable or will evolve; assess whether gender-affirming treatments are able to improve health outcomes of those who present with co-occurring mental health problems, including improvements in depression and suicide; and quantify the rate of regret.

The Finnish gender identity services program is a worldwide leader in pediatric gender medicine. The 2020 Finnish guidelines represent a strong signal that the pioneers of pediatric medical transition are concerned about unintended harm to the growing number of gender dysphoric adolescents presenting for care. The guidelines echo the concerns voiced by the principal investigator of the Dutch protocol, who warned the medical community in a commentary published in [Pediatrics](#) in 2020 that a "*new developmental pathway*" of gender dysphoria has emerged, including patients with "*postpuberty adolescent-onset transgender histories*" and "*more mental health challenges*," adding, "*these youth did not yet participate in the early evaluation studies. This raises the question whether the positive outcomes of early medical interventions also apply to adolescents who more recently present in overwhelming large numbers for transgender care.*"

While the official summary of the guidelines has been available on the Finnish Health Authority's site for a year (see [June 2020](#)), SEGM has just completed the translation of the full text of the Finnish guidelines for minors. **It is an unofficial translation.** The original and the translated versions of the guidelines are attached below.

Attachments

[Finnish Guidelines 2020 Minors Unofficial Translation.pdf](#)  
[Finnish Guidelines 2020 Minors Original.pdf](#)



---

Society for Evidence-Based Gender Medicine

© 2020 SEGM

# BMJ Open International clinical practice guidelines for gender minority/trans people: systematic review and quality assessment

Exhibit  
SL 10

Sara Dahlen <sup>1</sup>, Dean Connolly <sup>2,3</sup>, Isra Arif <sup>4</sup>,  
Muhammad Hyder Junejo <sup>5,6</sup>, Susan Bewley <sup>7</sup>, Catherine Meads <sup>8</sup>

**To cite:** Dahlen S, Connolly D, Arif I, *et al.* International clinical practice guidelines for gender minority/trans people: systematic review and quality assessment. *BMJ Open* 2021;11:e048943. doi:10.1136/bmjopen-2021-048943

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2021-048943>).

Received 15 January 2021  
Revised 22 March 2021  
Accepted 12 April 2021



© Author(s) (or their employer(s)) 2021. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

For numbered affiliations see end of article.

## Correspondence to

Professor Catherine Meads;  
Catherine.Meads@aru.ac.uk

## ABSTRACT

**Objectives** To identify and critically appraise published clinical practice guidelines (CPGs) regarding healthcare of gender minority/trans people.

**Design** Systematic review and quality appraisal using AGREE II (Appraisal of Guidelines for Research and Evaluation tool), including stakeholder domain prioritisation.

**Setting** Six databases and six CPG websites were searched, and international key opinion leaders approached.

**Participants** CPGs relating to adults and/or children who are gender minority/trans with no exclusions due to comorbidities, except differences in sex development.

**Intervention** Any health-related intervention connected to the care of gender minority/trans people.

**Main outcome measures** Number and quality of international CPGs addressing the health of gender minority/trans people, information on estimated changes in mortality or quality of life (QoL), consistency of recommended interventions across CPGs, and appraisal of key messages for patients.

**Results** Twelve international CPGs address gender minority/trans people's healthcare as complete (n=5), partial (n=4) or marginal (n=3) focus of guidance. The quality scores have a wide range and heterogeneity whichever AGREE II domain is prioritised. Five higher-quality CPGs focus on HIV and other blood-borne infections (overall assessment scores 69%–94%). Six lower-quality CPGs concern transition-specific interventions (overall assessment scores 11%–56%). None deal with primary care, mental health or longer-term medical issues. Sparse information on estimated changes in mortality and QoL is conflicting. Consistency between CPGs could not be examined due to unclear recommendations within the World Professional Association for Transgender Health Standards of Care Version 7 and a lack of overlap between other CPGs. None provide key messages for patients.

**Conclusions** A paucity of high-quality guidance for gender minority/trans people exists, largely limited to HIV and transition, but not wider aspects of healthcare, mortality or QoL. Reference to AGREE II, use of systematic reviews, independent external review, stakeholder participation and patient facing material might improve future CPG quality.

**PROSPERO registration number** CRD42019154361.

## Strengths and limitations of this study

- First systematic review to identify and use a validated quality appraisal instrument to assess all international clinical practice guidelines (CPGs) addressing gender minority/trans health.
- International CPGs were studied due to their influential status in gender minority/trans health, though further research is needed on national and local CPGs.
- An innovative prioritisation exercise was performed to elicit stakeholders' priorities and inform the setting of AGREE II (Appraisal of Guidelines for Research and Evaluation tool) quality thresholds, however these stakeholder priorities may not be applicable outside the UK.
- An inclusive approach using wide criteria, extensive searches and approaching key opinion leaders should have allowed the study to identify all relevant international CPGs, however it is possible some may have been missed.

## INTRODUCTION

### Assessing the quality of clinical practice guidelines

Evidence-based practice integrates best available research with clinical expertise and the patient's unique values and circumstances. High-quality clinical practice guidelines (CPGs) support high-quality healthcare delivery. They can guide clinicians and policymakers to improve care, reduce variation in clinical practice, thereby affecting patient safety and outcomes. The Institute of Medicine defines CPGs as: 'statements that include recommendations intended to optimise patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options',<sup>1</sup> although other definitions exist.<sup>2</sup> Recommendations are used alongside professional judgement, directly or within decision aids, in training and practice. CPGs are important but have limitations depending on evidence selection and

development processes.<sup>3</sup> Grading of Recommendations, Assessment, Development and Evaluation (GRADE) was developed to address the evidence that is selected and appraised during CPG development.<sup>4-6</sup> Using a systematic approach and transparent framework for developing and presenting summaries of evidence, GRADE is the most widely adopted tool worldwide for grading the quality of evidence and making recommendations,<sup>7</sup> but does not alone ensure a CPG is high quality. Strength of evidence is only one component of what makes a 'good' CPG; factors such as transparency, rigour, independence, multidisciplinary input, patient and public involvement, avoidance of commercial influences and rapidity<sup>8,9</sup> should also be considered. Broader domains of CPG quality are included in the Appraisal of Guidelines for Research and Evaluation instrument AGREE II.<sup>10-12</sup> Despite widely recognised principles and methods for developing sound CPGs, current research shows that guidelines on various topics lack appropriate uptake of systematic review methodologies in their development,<sup>13</sup> give recommendations that conflict with scientific evidence<sup>14</sup> or do not adequately take into account existing CPG quality and reporting assessment tools.<sup>15</sup> This emphasises the ongoing need to appraise guidelines to ensure evidence-informed care.

### Healthcare for gender minority/trans people

'Trans' is an umbrella term for individuals whose inner sense of self (gender identity) or how they present themselves using visual or behavioural cues (gender expression) differs from the expected stereotypes (gender) culturally assigned to their biological sex.<sup>16</sup> 'Gender minority' is an often-used alternative population description. Some gender minority/trans people may seek medical transition, which involves interventions such as hormones or surgery that alter physical characteristics and align appearance with gender identity. Patient numbers referred to UK gender identity clinics and length of waiting lists have increased in the last decade, particularly for adolescents,<sup>17</sup> a phenomenon seen elsewhere.<sup>18</sup> Gender minority/trans people may have continuing, sometimes complex, life-long healthcare needs whether they undergo medical transition or not. Gender minority/trans people may experience more mental health issues such as mood and anxiety disorders,<sup>19</sup> substance use<sup>20</sup> and higher rates of suicidal ideation.<sup>21</sup> They may seek assistance with sexual health, mental health,<sup>22</sup> substance use disorders,<sup>23</sup> prevention and/or management of HIV<sup>24</sup> as well as usual general health enquiries. However, they may encounter difficulties in accessing healthcare,<sup>25</sup> reporting negative healthcare experiences,<sup>26</sup> discrimination and stigma.<sup>27,28</sup> Like all individuals, gender minority/trans people require high-quality evidence-based healthcare<sup>25,29</sup> addressing general and specific needs.

### Guidelines used internationally and in the UK

The quality of current guidelines on gender minority/trans health is unclear. The World Professional Association for Transgender Health (WPATH) Standards of

Care Version 7 (SOCv7)<sup>30</sup> represent normative standards for clinical care, acting as a benchmark in this field.<sup>31</sup> Globally, many national and local guidelines<sup>32-35</sup> are adaptations of, acknowledge being influenced by, or are intended to complement WPATH SOCv7,<sup>30</sup> despite expressed reservations that WPATH SOCv7<sup>30</sup> is based on lower-quality primary research, the opinions of experts and lacks grading of evidence.<sup>36</sup>

In the UK, an advocacy group worked to incorporate WPATH SOCv7<sup>30</sup> into national practice.<sup>37</sup> WPATH SOCv7<sup>30</sup> informs National Health Service (NHS) gender identity clinics<sup>38</sup> and guidelines produced by the Royal College of Psychiatrists (without use of GRADE).<sup>39</sup> No CPGs were available from the National Institute for Health and Care Excellence (NICE), Scottish Intercollegiate Guidelines Network (SIGN), British Association of Gender Identity Specialists, or medical Royal Colleges, although the Royal College of General Practitioners issued a position statement on gender minority/trans healthcare in 2019.<sup>40</sup> Assessing quality of international CPGs such as WPATH SOCv7<sup>30</sup> has practice implications for the NHS<sup>38</sup> and private sector. CPGs with international scope may present additional challenges (eg, the implementability of key recommendations might not be easily translated among different contexts) but they seem to influence discourse around gender minority/trans health.<sup>36</sup> No prior study has investigated the number and quality of guidelines to support the care and well-being of gender minority/trans people. The purpose of this research was to identify and critically appraise all published international CPGs relating to the healthcare of gender minority/trans people.

## METHODS

### Approach/research design

The rationale was to identify the key CPGs available to healthcare practitioners in this field of clinical practice. Following preliminary searches, we chose international CPGs in view of WPATH's influence within the UK and elsewhere, and to avoid 'double-counting'. We considered AGREE II<sup>10-12</sup> the most appropriate tool; it is the most comprehensively validated and evaluated instrument available for assessing CPGs,<sup>41,42</sup> designed for use by non-expert stakeholders<sup>10</sup> such as healthcare providers, practicing clinicians and educators.<sup>11</sup> It benefits from clear instructions and prompts regarding scoring and several people applying the criteria independently (a minimum of two reviewers, but four are recommended). AGREE II synthesis calculates quality scores from 23 appraisal criteria organised into six key domains (scope and purpose, stakeholder involvement, rigour of development, clarity of presentation, applicability, editorial independence) and an overall assessment of 'Recommend for use?' (answer options; yes, no, yes if modified). This systematic review was conducted according to a pre-specified PROSPERO protocol [https://www.crd.york.ac.uk/prospero/display\\_record.php?RecordID=154361](https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=154361)



uploaded 19 December 2019. The MEDLINE strategy was straightforward; although not formally processed,<sup>43</sup> it was peer-reviewed by an information specialist.

### Inclusion and exclusion criteria

We defined a CPG as a systematically developed set of recommendations that assist practitioners and patients in the provision of healthcare in specific circumstances, produced after review and assessment of available clinical evidence.<sup>12 44–46</sup> CPGs published after 1 January 2010 were eligible if they (or part thereof) specifically targeted patients/population with gender minority/trans status and/or gender dysphoria, were evidence-based, with some documentation of development methodology, had international scope (more than one country, defined as a Member State of the United Nations) and were an original source. We chose the time frame to focus on the most recent guidelines, currently applicable to practice and to include WPATH SOCv7.<sup>30</sup> CPGs were eligible if they met the following inclusion criteria: participants/population was adults and/or children who are gender minority/trans with no exclusion due to comorbidities or age although differences/disorders in sex development (intersex) were excluded; exposure/intervention was any health intervention related to gender dysphoria or gender affirmation, or health concerns of gender minority/trans people, including screening, assessment, referral, diagnosis and interventions. We excluded previous versions of the same CPG. We used broad criteria because terminology has been in flux with changes made in both International Classification of Diseases and Diagnostic and Statistical Manual of Mental Disorders diagnostic criteria.<sup>16</sup> There were no restrictions on setting or language.

### Search strategy and guideline selection

We conducted the searches up to 11 June 2020 (CM), using search terms and appropriate synonyms (as Medical Subject Heading (MeSH) terms and text words) that we developed based on population and exposures (online supplemental table 1). We searched six databases (Embase, MEDLINE, Web of Science, PsycINFO, CINAHL, LILACS) and six CPG websites (Agency for Healthcare Research and Quality National Guideline Clearinghouse (NGC), eGuidelines and Guidelines, NICE National Library for Health, SIGN, EBSCO DynaMed Plus, Guidelines International Network Library) and the World Health Organization (WHO). The NGC closed in 2017 but CM hand-searched the archive. In addition to protocol, individual reviewers (IA, DC and MHJ) hand-searched four specialty journals (International Journal of Transgender Health, Transgender Health, LGBT Health, Journal of Homosexuality) to ensure key subject-relevant sources of abstracts were thoroughly checked. In order to find potential grey literature CPGs outwith the scholarly literature, two reviewers (IA and SD) independently performed four separate Google searches (not Google Scholar as misstated in the protocol) by

using one generic (clinical practice guidelines) plus one specific term (transgender, gender dysphoria, trans health or gender minority) and examining the first 100 hits. We identified International Key Opinion Leaders (n=24) via publications known to reviewers (DC and SD) and contacted them via email, with one reminder, to identify further guidelines. Reference lists of relevant reviews and all full-text studies were hand-searched to identify any relevant papers or CPGs not found by database searching. Two reviewers (SB and SD) independently read all titles and abstracts and assessed for inclusion. If there was uncertainty or disagreement, or reasonable suspicion that the full-text might lead to another relevant CPG, the full-text was obtained. Non-English abstracts were Google-translated but if a possible CPG could not be reliably excluded, the full-text paper was obtained and translated. Where full-text publications could not be accessed, we contacted authors directly. Two reviewers (SB and either DC/MHJ) independently carried out full-text assessment to determine inclusion or exclusion from the systematic review based on the above criteria, and noted reasons for excluding full-texts. The whole team discussed uncertainties and disagreements to achieve consensus, with voting and final adjudication by the senior author (CM).

### Data extraction

Two reviewers (SB and SD) independently collected formal descriptive data of included CPGs. All ambiguities or discrepancies were referred to the team for discussion and to re-examine original texts and extract data. Information collected was title, author, year of publication, number of countries covered, originating organisation, audience, methods used, page and reference numbers (excluding accompanying materials) and funding. Key recommendations were extracted for comparison between CPGs. We searched for all text mentions of mortality or any measures of quality of life (QoL), and noted if accompanied by a citation. All patient facing material was extracted. In addition, we extracted data about publication outlet (journal/website), and whether the quantity of information pertaining to the health of gender minority/trans people represented a complete, partial or marginal proportion of recommendations in the CPG.

### Outcomes

Outcomes were: the number and quality assessment scores (using AGREE II) of international CPGs addressing the health of gender minority/trans people; analysis and comparison of the presence or absence of information on estimated changes in mortality or QoL (any measure) following any specific recommended intervention, over any time interval; the consistency (or lack thereof) of recommendations across the CPGs; and the presence (or absence) of key messages for patients.

## Quality assessment

All authors completed AGREE II video training, a practice assessment and two pilots whose results were discussed. The six reviewers (IA, SB, DC, SD, MHJ and CM) independently and anonymously completed quality scoring on every CPG by rating each of the items using the standard proforma on the My AGREE PLUS online platform (AGREE enterprise website),<sup>11</sup> which also calculated group appraisal scores.

## Patient and public involvement

The AGREE II instrument generates quality scores but does not set specific parameters for what constitutes high quality, recommending that decisions about defining such thresholds should be made prior to performing appraisals, considering relevant stakeholders and the context in which the CPG is used.<sup>11</sup> To help set quality thresholds, we conducted an AGREE II domain prioritisation exercise in January 2020 via email, with one reminder. It was considered impossible to ensure comprehensive representation of international stakeholders. We chose the UK for feasibility, although validity might be limited to UK-based clinicians. Fifty-two UK service-user stakeholder groups and gender minority/trans advocacy organisations, identified via reviewer knowledge and internet searches (IA, SB, DC, SD, MHJ and CM), were informed about the study. They were invited to participate in a stakeholder prioritisation of the AGREE II domains, created using SurveyMonkey and with an option to remain anonymous (<https://www.surveymonkey.co.uk/r/WLZ55NQ> gives invitation wording, links to resources and protocol). The reviewer team performed an anonymous prioritisation for comparison.

## Strategy for data and statistical analyses

Simple frequencies were used to present the stakeholder and reviewer priorities, and outcomes. Following team discussion of the prioritisation exercise results, no prespecified quality threshold score was used to define high or low quality, although colour was superimposed ( $\leq 30\%$ ,  $31\%$ – $69\%$  and  $\geq 70\%$ ) on the final scores table to aid visual comparisons and interpretation.

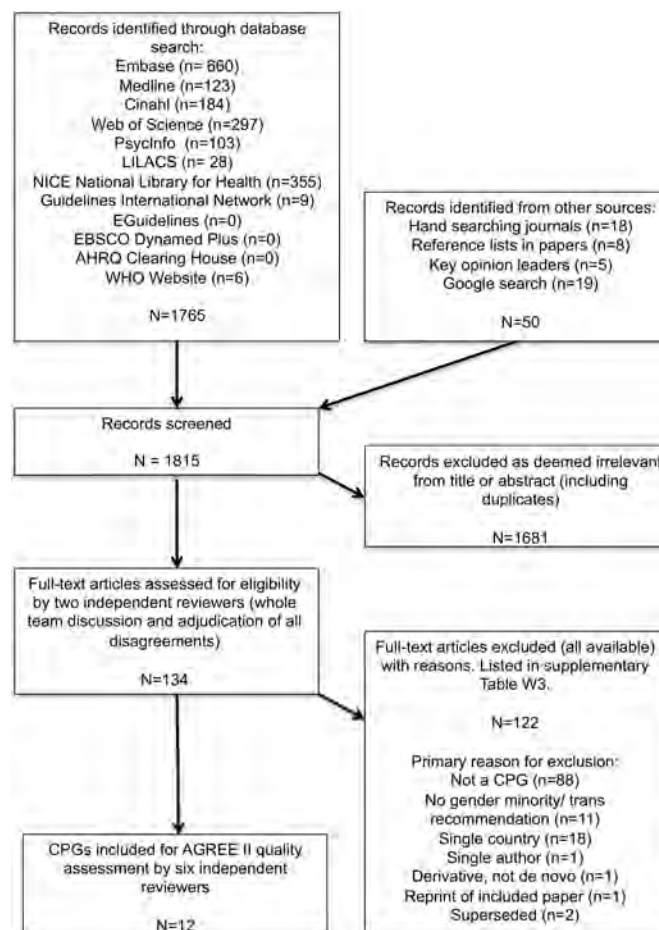
## RESULTS

### Search results

Figure 1 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow chart<sup>47</sup>) shows that 1815 citations were identified, of which 134 full-text publications were read (all available, three supplied by authors) and 122 excluded (online supplemental table W2 with reasons).

### Data extraction

Table 1 shows the characteristics of the CPGs. Online supplemental tables W3 and W4 show raw data of key recommendations and mortality and QoL evidence.



**Figure 1** Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow diagram. AGREE II, Appraisal of Guidelines for Research and Evaluation tool; CPG, clinical practice guideline; NICE, National Institute for Health and Care Excellence.

### Number and characteristics of clinical practice guidelines

Twelve CPGs (table 1) originated from: WHO (n=3),<sup>48–50</sup> WPATH (n=2),<sup>30 51</sup> professional specialist/special-interest societies (n=4),<sup>52–55</sup> small groups of experts (n=2)<sup>56 57</sup> and one consortium.<sup>58</sup> All were published in English, in journals,<sup>51–57</sup> the organisation's website<sup>48–50 58</sup> or both.<sup>30</sup> Guideline development methodology was variable, including use of systematic reviews (table 1). Ten CPGs had no external review, eight had no update plans. Gender minority/trans health recommendations made up complete (n=5),<sup>30 51 53 55 57</sup> partial (n=4)<sup>48–50 56</sup> or marginal (n=3)<sup>52 54 58</sup> focus of content. CPGs contained 10 to 155 pages, and 20 to 505 references. Funding sources were wide-ranging and sometimes multiple, from government agencies, professional societies, charities and private donations. Two CPGs provided no funding details.<sup>52 56</sup>

A 13th CPG was excluded post-scoring as it had been superseded by a 2020 version without recommendations for gender minority/trans people.<sup>59</sup> It was arguable if four included CPGs did meet criteria: one had not been withdrawn<sup>48</sup>; one contained minimal relevant content<sup>52</sup>; one might not have been intended as a CPG<sup>30</sup> (although

**Table 1** General characteristics of included clinical practice guidelines (n=12)

Number	Author (year)	Full title	Countries covered	Origin	Primary audience	Design (systematic review, SR, used and methods thereafter)	Planned update given	Funding
1	Coleman <i>et al</i> (2012) <sup>30</sup>	Standards of care for the health of transsexual, transgender and gender non-conforming people V.7	Global	WPATH	Health professionals	Work groups submit manuscripts based on prior literature reviews, no explicit links of recommendations to evidence, expert consensus. No independent external review	No	Tawani Foundation and gift from anonymous donor
2	Davies <i>et al</i> (2015) <sup>51</sup>	Voice and communication change for gender non-conforming individuals: giving voice to the person inside	Global	WPATH	Speech-language therapists	Review of evidence. Expert consensus. No independent external review	No	Transgender Health Information Program of British Columbia Canada
3	ECDC (2019) <sup>58</sup>	Public health guidance on HIV, hepatitis B and C testing in the EU/EEA	EU/EEA	ECDC consortium CHIP, PHE, SSAT and EATG	Member states' public health professionals who coordinate the development of national guidelines or programmes for HBV, HCV and HIV testing	Four SRs, SIGN, NICE and AXIS checklists. Ad hoc internal and external expert panel, independent chair, expert consensus. No independent external review	No	Commissioned by ECDC, contractor Rigshospitalet CHIP
4	Gilligan <i>et al</i> (2017) <sup>52</sup>	Patient-clinician communication: American Society of Clinical Oncology consensus guideline	USA and others	ASCO	Clinicians who care for adults with cancer	Nine questions (one SR), expert consensus and a Delphi exercise. No independent external review	Regular review 3-year check	None declared
5	Hembree <i>et al</i> (2017) <sup>53</sup>	Endocrine treatment of gender-dysphoric/gender-incongruent persons: an Endocrine Society clinical practice guideline	Global	Endocrine Society	Endocrinologists, trained mental health professionals and trained physicians	Two SRs and GRADE, rest expert consensus. No independent external review	No	Endocrine Society
6	IAPHCCO (2015) <sup>54</sup>	IAPAC guidelines for optimising the HIV care continuum for adults and adolescents	Global	IAPAC	Care providers, programme managers, policymakers, affected communities, organisations, and health systems involved with implementing HIV programmes and/or delivering HIV care	A systematic search of CDC database, expert consensus. No independent external review	No	IAPAC, US NIH and Office of AIDS Research
7	Ralph <i>et al</i> (2010) <sup>56</sup>	Trauma, gender reassignment and penile augmentation	Not specified (international publication)	Author group	Not stated (urological surgeons)	No SR. Unclear if literature review. Leading experts' consensus opinion. No independent external review	No	None declared
8	Strang <i>et al</i> (2018) <sup>57</sup>	Initial clinical guidelines for co-occurring autism spectrum disorder and gender dysphoria or incongruence in adolescents	Not specified (international publication)	Author group	Clinicians	No SR or literature review. Two-stage Delphi consensus. No independent external review	No	Isadore and Bertha Gudelsky Family Foundation
9	T'Sjoen <i>et al</i> (2020) <sup>55</sup>	ESSM Position Statement 'Assessment and hormonal management in adolescent and adult trans people, with attention for sexual function and satisfaction'	Europe	ESSM	European clinicians working in transgender health, sexologists and other healthcare professionals	No SR. Leading experts' consensus opinion. No independent external review	No	ESSM
10	WHO (2011) <sup>48</sup>	Prevention and treatment of HIV and other sexually transmitted infections among men who have sex with men and transgender people. Recommendations for a public health approach	Global	WHO	National public health officials and managers of HIV/AIDS and STI programmes, NGOs including community and civil society organisations, and health workers	13 SRs for PICO and GRADE, external GDG, and independent external review	Yes in 2015	BMZ and PEPFAR through CDC and USAID
11	WHO (2012) <sup>49</sup>	Guidance on oral pre-exposure prophylaxis for serodiscordant couples, men and transgender women who have sex with men at high risk of HIV. Recommendations for use in the context of demonstration projects	Global	WHO	Countries/member states	Four SRs (including values and preferences reviews) and GRADE, external GDG and independent external review group	Yes in 2015	Bill & Melinda Gates Foundation

Continued



Table 1 Continued

Number	Author (year)	Full title	Countries covered	Origin	Primary audience	Design (systematic review, SR, used and methods thereafter)	Planned update given	Funding
12	WHO (2016) <sup>50</sup>	Consolidated guidelines on HIV prevention, diagnosis, treatment and care for key populations. 2016 update	Global	WHO	National HIV programme managers and other decision-makers within ministries of health and those responsible for health policies, programmes and services in prisons	Two new SRs in revised guidance, GRADE, external GDGs and 79 independent external peer reviewers	Regular updates; no detail	UNAIDS, PEPFAR, Global Fund

AACE, American Association of Clinical Endocrinologists; ASA, American Society of Andrology; ASCO, American Society of Clinical Oncology; ASD, autism spectrum disorder; AXIS, Appraisal Tool for Cross-Sectional Studies; BMZ, German Federal Ministry for Economic Cooperation and Development; CDC, the Centers for Disease Control and Prevention; CHIP, CHIP/Region H, Rigshospitalet, University of Copenhagen; CPG, clinical practice guideline; EATG, European AIDS Treatment Group; EAU, European Association of Urology; ECDC, European Centre for Disease Prevention and Control; ESE, European Society for Endocrinology; ESPE, European Society for Pediatric Endocrinology; ESSM, European Society for Sexual Medicine; EU/EEA, European Union/European Economic Area; GDG, guideline development group; Global Fund, Global Fund to Fight AIDS, Tuberculosis and Malaria; GRADE, Grading of Recommendations, Assessment, Development and Evaluation; HBV, hepatitis B virus; HCV, hepatitis C virus; IAPAC, International Association of Providers of AIDS Care; IAPHCCO, International Advisory Panel on HIV Care Continuum Optimization; NGO, non-governmental organisations; NICE, National Institute of Health and Care Excellence; NIH, National Institutes of Health; PEPFAR, US President's Emergency Plan for AIDS Relief; PES, Pediatric Endocrine Society; PHE, Public Health England; PICO, Participants/patients, Intervention, Comparators, Outcomes; SIGN, Scottish Intercollegiate Guidelines Network; SR, systematic review; SSAT, St Stephen's AIDS Trust; STI, sexually transmitted infection; UNAIDS, The United Budget, Results and Accountability Framework of the Joint United Nations Programme on HIV/AIDS; USAID, US Agency for International Development; WPATH, World Professional Association for Transgender Health.

WPATH SOCv7's stated overall goal is 'to provide clinical guidance for health professionals'<sup>30</sup> it contains no list of key recommendations nor auditable quality standards, yet is widely used to compare procedures covered by US providers<sup>60 61</sup>; one variously described itself as 'position statement' and 'position study' (stating it did 'not aim to provide detailed clinical guidelines for professionals such as... [named]<sup>30 53</sup>, but evidence was obviously linked to key recommendations for clinicians<sup>55</sup>). After discussion it was decided not to exclude these borderline CPGs, as the definition of CPG in the protocol was intended to favour an inclusive approach.

### Quality prioritisation and assessment

Results of the domain prioritisation by stakeholders (n=19 replies, response rate 39% excluding 3 'undeliverable') and reviewers (n=6) showed that stakeholders prioritised stakeholder involvement, whereas the reviewer team prioritised methodological rigour (online supplementary table W5). No stakeholder asked for clarification or more information.

Table 2 shows AGREE II scores by domain (8%–94%), and overall (11%–94%). The quality scores have a wide range and heterogeneity. Five CPGs focused on trans people as a key population for HIV and other blood-borne infections (overall assessment scores 69%–94%). Six CPGs concerned transition-specific interventions (overall assessment scores 11%–56%). Transition-related CPGs tended to lack methodological rigour and rely on patchier, lower-quality primary research. The two prioritised domain scores were usually comparable with the overall AGREE II quality assessment (ranges; stakeholder involvement 14%–93%, methodological rigour 17%–87%). Four CPGs obtained a majority opinion 'recommend for use',<sup>48–50 58</sup> five CPGs had unanimous 'do not recommend',<sup>30 51 55–57</sup> and three had minority support with division about the extent of 'yes, if modified',<sup>52–54</sup> (table 2). Despite wide variation there was a pattern; HIV and blood-borne infection guidelines<sup>48–50 54 58</sup> were higher quality, and those focusing on transition were lower quality.<sup>30 53 55–57</sup>

### Content

Four CPGs concerning HIV prevention, transmission and care<sup>48–50 54</sup> and one public health guideline on population screening for blood-borne viruses,<sup>58</sup> contained recommendations for gender minority/trans people as a 'key population'. Three CPGs were devoted to overall transition care for all gender minority/trans people,<sup>30 53 55</sup> two to an aspect of transition<sup>51 56</sup> and one to transition in a specific group.<sup>57</sup> One oncology communication guideline contained a single recommendation relating to gender minority/trans people.<sup>52</sup> No international guidelines were found that addressed primary care, psychological support/mental health interventions, or general medical/chronic disease care (such as cardiovascular, cancer or elderly care).

**Table 2** AGREE II (Appraisal of Guidelines for Research and Evaluation tool) domain percentages and overall assessment of included guidelines, and summary of mortality/quality of life measures (n=12)

Number	Author (year)	Scope and purpose	Stakeholder involvement	Rigour of development	Clarity and presentation	Applicability	Editorial independence	Overall assessment	Recommendation to use	Mortality	Quality of life (any formal measure)	Mortality (any comment) and quality of life (any formal measure)
1	Coleman <i>et al</i> (2012) <sup>30</sup>	63%	47%	20%	37%	16%	15%	31%	Yes <b>0</b> No <b>5</b> If modified <b>1</b>	Y	Y	M: Higher in post SRS vs matched no SRS, and both pre and post SRS vs gen popn. QoL: FM<gen popn, FM post breast/chest surgery >not surgery, mixed results at 15 years.
2	Davies <i>et al</i> (2015) <sup>51</sup>	62%	38%	17%	61%	28%	14%	28%	Yes <b>0</b> No <b>3</b> If modified <b>3</b>	N	Y	QoL: A voice-related TG QoL measure correlated with own and others' perception.
3	ECDC (2018) <sup>58</sup>	94%	56%	55%	76%	68%	38%	69%	Yes <b>4</b> No <b>0</b> If modified <b>2</b>	Y	Y	M: Reduced by early diagnosis. QoL: Cost/QALY in anti-HCV birth cohort screening is acceptable. Universal offer HIV testing in hospital settings is highly cost effective.
4	Gilligan <i>et al</i> (2017) <sup>52</sup>	84%	67%	66%	81%	47%	61%	78%	Yes <b>2</b> No <b>0</b> If modified <b>4</b>	N	N	M: TW/TM's CV mortality same ('insufficient very low quality data' for TM) and younger age at death after SRS. QoL: long-term psychological and psychiatric issues post SRS.
5	Hembree <i>et al</i> (2017) <sup>33</sup>	65%	40%	41%	73%	29%	65%	56%	Yes <b>1</b> No <b>2</b> If modified <b>3</b>	Y	Y	M: Lower if early ART, easy access, immediate ART, and community distribution. QoL: ART preserves QoL, and stigma and mental health impact on QoL.
6	IAPHCCO (2015) <sup>54</sup>	85%	56%	61%	87%	40%	63%	81%	Yes <b>3</b> No <b>0</b> If modified <b>3</b>	Y	Y	M: TW/TM's CV mortality same ('insufficient very low quality data' for TM) and younger age at death after SRS. QoL: long-term psychological and psychiatric issues post SRS.
7	Ralph <i>et al</i> (2010) <sup>56</sup>	45%	14%	19%	64%	5%	32%	28%	Yes <b>0</b> No <b>5</b> If modified <b>1</b>	N	N	M: Lower if early ART, easy access, immediate ART, and community distribution. QoL: ART preserves QoL, and stigma and mental health impact on QoL.
8	Strang <i>et al</i> <sup>57</sup> (2018)	57%	33%	19%	39%	8%	25%	11%	Yes <b>0</b> No <b>6</b> If modified <b>0</b>	N	N	M: TW/TM's CV mortality same ('insufficient very low quality data' for TM) and younger age at death after SRS. QoL: long-term psychological and psychiatric issues post SRS.
9	T'Sjoen <i>et al</i> (2020) <sup>55</sup>	59%	37%	35%	58%	15%	33%	42%	Yes <b>0</b> No <b>4</b> If modified <b>2</b>	N	Y	QoL: Sexual life improves after GAMI, but not to non-TG levels.
10	WHO (2011) <sup>48</sup>	94%	89%	87%	86%	64%	82%	83%	Yes <b>5</b> No <b>0</b> If modified <b>1</b>	Y	Y	M: Looked for mortality evidence but none found. QoL: Positive QALYs if HIV averted.
11	WHO (2012) <sup>49</sup>	85%	60%	81%	76%	41%	72%	72%	Yes <b>4</b> No <b>0</b> If modified <b>2</b>	N	Y	QoL: Positive QALYs modelled if PrEP.
12	WHO (2016) <sup>50</sup>	94%	93%	81%	89%	84%	65%	94%	Yes <b>5</b> No <b>0</b> If modified <b>1</b>	Y	N	M: Better if access and if adhere to OST, and at prison release; if early ART and completed TB Rx, HBV/HCV managed; and access to post-abortion care. Worse if food insecure, poor nutrition, low body mass index.

Colours to aid interpretation (not thresholds) ≤30% RED, 31–69% AMBER, ≥70% GREEN.

ART, antiretroviral therapy; CV, cardiovascular; ECDC, European Centre for Disease Prevention and Control; FM, female-to-male; GAMI, gender affirming medical intervention; gen popn, general population; HBV, hepatitis B virus; HCV, hepatitis C virus; HIV, human immunodeficiency virus; IAPHCCO, International advisory panel on HIV care continuum optimization; M, mortality; OST, opiate substitute therapy; PrEP, pre-exposure prophylaxis; QALY, quality adjusted life year; QoL, quality of life; Rx, treatment; SR, systematic review; SRS, sex reassignment surgery; TB, tuberculosis; TG, trans people/gender-minority; TM, trans man; TW, trans woman.



## Mortality and quality of life

Six CPGs referred to mortality<sup>30 48 50 53 54 58</sup> and eight to QoL<sup>30 48 49 51 53–55 58</sup> (table 2). Online supplemental table W4 shows all extractions of sentences relating to mortality or morbidity, associated references and which CPGs included no such data. More robust evidence was linked to the recommendations in the HIV and blood-borne virus CPGs whereas there was little, inconsistent data and poorer linking to evidence in transition-related CPGs.

## Consistency of recommendations across the CPGs

Online supplemental table W5 contains all extracted key recommendations where these could be distinguished. It shows little overlap of topic content across the CPGs. Many recommendations in WHO 2011<sup>48</sup> and 2016<sup>50</sup> were similar, but not identical, the former not being stood down after the latter was published. No statements were highlighted by the WPATH SOCv7<sup>30</sup> authors as key recommendations, and it proved impossible for all six reviewers independently performing data extraction to identify them. The total number of extracted recommendations ranged between 0 and 168 with little consistency or agreement on what passages were selected. Some extracted statements might have been intended as recommendations or standards, but many were flexible, disconnected from evidence and could not be used by individuals or services to benchmark practice. After discussion of this incoherence within WPATH SOCv7<sup>30</sup> and our inability therefore to compare recommendations across all CPGs, it was decided not to revisit inclusions post hoc but to abandon this protocol aim.

## Patient facing material

No patient-facing material was found in any guideline.

## DISCUSSION

### Statement of principal findings

Variable quality international CPGs regarding gender minority/trans people's healthcare contain little, conflicting information on mortality and QoL, no patient facing messages and inconsistent use of systematic reviews in generating recommendations. A major finding is that the scope of the guidelines is confined to HIV/STI prevention or management of transition with an absence of guidelines relating to other medical issues. WPATH SOCv7<sup>30</sup> cannot be considered 'gold standard'.

### Strengths and weaknesses of this study

Strengths include protocol preregistration, stakeholder involvement, piloting all stages, an extensive systematic search without language restriction for any relevant current guidelines, wide inclusion criteria including grey literature, use of key opinion leaders, close attention to avoidance of bias, double full-text reading and data entry and careful presentation of results. Six trained reviewers, exceeding AGREE II recommendations,<sup>11</sup> compensated for expected variation in scoring. Extensive searches

should have mitigated loss of CPGs. Limitations include some uncertainty about stakeholder understanding despite a good response rate, and generalisability of the prioritisation only to the UK; stakeholders elsewhere might have different priorities. Focusing only on international CPGs might have missed higher quality national and local CPGs derived from them or written de novo. The social acceptance and consequent healthcare system coverage of gender minority/trans health related interventions vary among different countries, which may limit the space for international and multinational guidelines. While the search strategy yielded an oncology communication CPG with a single recommendation for gender minority/trans people,<sup>52</sup> other general health CPGs with similar solo statements might have been missed.

### Comparison with other studies, discussing important differences in results

This is the first systematic review using a validated quality appraisal instrument of international CPGs addressing gender minority/trans health. It may act as a benchmark to monitor and improve population healthcare. CPG quality results correspond with, and quantitatively confirm, previously noted concerns about the evidence-base<sup>36 62 63</sup> and variable use of quality assessment in systematic reviews,<sup>64–66</sup> in a healthcare field with unknown or unclear longitudinal outcomes.<sup>17</sup> AGREE II has been applied to CPGs in other medical areas, including cancer,<sup>67</sup> diabetes,<sup>68</sup> pregnancy<sup>69</sup> and depression.<sup>70</sup> These exercises tend to show room for improvement. Developers have been criticised for not using methodological rigour when writing reliable evidence-based guidelines,<sup>71</sup> as well as not implementing high-quality CPGs.<sup>72</sup> Thus, finding poor quality CPGs is not confined to this area of healthcare.<sup>73</sup> Improvement messages are generalisable to other specialties.

### Meaning of the study: possible explanations

The finding of higher-quality, but narrow, focus on gender minority/trans people's healthcare for blood-borne infections may relate to the global HIV pandemic and the WHO applying twin lenses of public health and human rights (ie, the population as 'means' and 'ends'). The lower-quality CPGs focus on transition. WPATH SOCv7<sup>30</sup> originated nearly a decade ago from a special-interest association; diagnostic criteria and CPG methodology have since changed. Although HIV and transition are important, it is puzzling to have found so little else, maybe suggesting CPGs for gender minority/trans people have been driven by provider-interests rather than healthcare needs. Including gender minority/trans people in guidelines can be considered a matter of health equity, where CPGs have a role to play.<sup>74</sup> GRADE suggests CPG developers may consider equity at various stages in creating guidelines, such as deciding guideline questions, evidence searching and assembly of the guideline group.<sup>75</sup> How CPGs may impact more vulnerable members of

society should be reflected-upon during guideline development,<sup>76</sup> and implementation.<sup>77</sup>

### Implications for clinicians, UK and international policymakers and patients

Clinicians should be made aware that gender minority/trans health CPGs outside of HIV-related topics are linked to a weak evidence base, with variations in methodological rigour and lack of stakeholder involvement. While patient care plans ought to take into account the individual needs of each gender minority/trans person, a gap appears to exist between clinical practice and research in this field.<sup>78</sup> Clinicians should proceed with caution, explain uncertainties to patients and recruit to research.

Policymakers ought to invest in both primary research and high-quality systematic reviews in areas relevant for CPG and service development. Organisations producing guidelines and aspiring to higher-level quality could use more robust methods, handling of competing interests<sup>79 80</sup> and quality assessment. CPG developers should label key recommendations clearly. Although editorial independence was lowest priority for stakeholders, independent external review is important to avoid biases and bad practices, examine use of resources, resist commercial interests and gain widespread credibility outside the field.

The UK is fortunate in being familiar with developing priority-setting partnerships (eg, James Lind Initiative<sup>81</sup>) and generating suites of clinical questions that might cover all steps in patient pathways (eg, in partnership with Cochrane Collaboration<sup>82</sup>). These could underpin multidisciplinary and funded research priorities whose results feed into future better evidence-based CPGs. Implications for UK education and curricular content (eg, new gender identity healthcare credentials<sup>83</sup>), should be carefully scrutinised.

Internationally, CPG development and implementation will vary depending on local country contexts and available resources. Those countries with quality assurance agencies might use them for external assurance. Countries might reconsider the wisdom of adapting low-quality 'off the shelf' international CPGs without due assessment of the evidence for recommendations (eg, using the GRADE-ADOLOPMENT framework<sup>84</sup>). WHO demonstrates how CPGs can achieve high quality.

Patients should be positively encouraged to engage with CPG development as stakeholders. The lack of patient-facing material should be addressed, especially as medical and non-medical online material contains jargon, is unreliable and potentially misleading.<sup>85</sup> Future CPGs should be populated with patient-facing decision aids (eg, fact boxes<sup>86</sup> and icon arrays<sup>87</sup>) that explain sizes of benefits and harms to support informed patient choice. Patients and carers will benefit from a more focused approach to throughout-life healthcare. As the figures for gender minority/trans patients increase within the NHS and internationally, so does the need for consistent guidance to clinicians across specialisms on specific risks to, and means of treating, this population. Current patients should be welcomed to contribute, where they are

comfortable, to any research being undertaken by their clinicians, in order to improve data and future practice for gender minority/trans health.

### Unanswered questions and future research

This study should be replicated as new iterations of international CPGs become available. It can be applied to national guidelines and countries should perform their own stakeholder prioritisation. When 'best available evidence' is poor, quality improvement can be driven both from inside and outside the field. International guideline developers require more primary research for this population, and impetus from clinicians and scientists to build a better evidence base using robust data from randomised controlled trials and long-term observational cohort studies, especially regarding chronic diseases, health behaviours, substance use, screening and how interventions (eg, hormones) might impact on long-term health (eg, risk of cardiovascular and thromboembolic disease). Mortality and QoL data are required to address questions of clinical and cost-effectiveness.

### CONCLUSION

Gender minority/trans health in current international CPGs seems limited to a focus on HIV or transition-related interventions. WPATH SOCv7<sup>30</sup> is due for updating and this study should be used positively to accelerate improvement. Future guideline developers might better address the holistic healthcare needs of gender minority/trans people by enhancing the evidence-base, upgrading the quality of CPGs and increasing the breadth of health topics wherein this population is considered.

### Author affiliations

<sup>1</sup>Department of Global Health & Social Medicine, King's College London, London, UK

<sup>2</sup>Barts Health NHS Trust, London, UK

<sup>3</sup>Addictions Department, King's College London Institute of Psychiatry, Psychology and Neuroscience, London, UK

<sup>4</sup>King's College London, London, UK

<sup>5</sup>Genitourinary Medicine, Chelsea and Westminster Hospital NHS Foundation Trust, London, UK

<sup>6</sup>56 Dean St, London, UK

<sup>7</sup>Department of Women and Children's Health, School of Life Course Sciences, King's College London, London, UK

<sup>8</sup>Faculty of Health, Medicine, Education and Social Care, Anglia Ruskin University - Cambridge Campus, Cambridge, UK

**Acknowledgements** We thank Richard Wakeford and Leena Järveläinen (information specialists, British Library and Turku University Library), Gillian Claire Evans (German translations), Sarah Peitzmeier, Sam Winter, Christina Richards and Riittakerttu Kaltiala (opinion leaders), Paul Seed (statistician), researchers who shared copies of their papers, the UK stakeholders who participated in the prioritisation exercise and the peer reviewers whose feedback improved the work.

**Contributors** The authors were involved as follows: SB, IA, CM conception. All authors (SD, DC, IA, MHJ, SB, CM) were involved in design, execution, analysis, drafting manuscript and critical discussion; all were responsible for revision and final approval of the manuscript. All authors had full access to all the data (including statistical reports and tables) in the study and can take responsibility for the integrity of the data and the accuracy of the data analysis. CM acts as guarantor.

**Funding** The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

**Competing interests** None declared.

**Patient consent for publication** Not required.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data availability statement** Data sharing statement: Additional data are available upon request.

**Supplemental material** This content has been supplied by the author(s). It has not been vetted by BMJ Publishing Group Limited (BMJ) and may not have been peer-reviewed. Any opinions or recommendations discussed are solely those of the author(s) and are not endorsed by BMJ. BMJ disclaims all liability and responsibility arising from any reliance placed on the content. Where the content includes any translated material, BMJ does not warrant the accuracy and reliability of the translations (including but not limited to local regulations, clinical guidelines, terminology, drug names and drug dosages), and is not responsible for any error and/or omissions arising from translation and adaptation or otherwise.

**Open access** This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

#### ORCID iDs

Sara Dahlen <http://orcid.org/0000-0002-1798-1816>

Dean Connolly <http://orcid.org/0000-0002-3139-4263>

Isra Arif <http://orcid.org/0000-0002-8623-2069>

Muhammad Hyder Junejo <http://orcid.org/0000-0000-0003-2458-9991>

Susan Bewley <http://orcid.org/0000-0001-8064-652X>

Catherine Meads <http://orcid.org/0000-0002-2368-0665>

#### REFERENCES

- 1 Institute of Medicine. *Clinical practice guidelines we can trust*. Washington, DC: The National Academies Press, 2011.
- 2 Kredo T, Bernhardtsson S, Machingaidze S, et al. Guide to clinical practice guidelines: the current state of play. *Int J Qual Health Care* 2016;28:122–8.
- 3 Woolf SH, Grol R, Hutchinson A, et al. Clinical guidelines: potential benefits, limitations, and harms of clinical guidelines. *BMJ* 1999;318:527–30.
- 4 Guyatt GH, Oxman AD, Kunz R, et al. What is "quality of evidence" and why is it important to clinicians? *BMJ* 2008;336:995–8.
- 5 Guyatt GH, Oxman AD, Vist GE, et al. GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. *BMJ* 2008;336:924–6.
- 6 Guyatt G, Oxman AD, Akl EA, et al. GRADE guidelines: 1. Introduction-GRADE evidence profiles and summary of findings tables. *J Clin Epidemiol* 2011;64:383–94.
- 7 Siemieniuk R, Guyatt G. What is GRADE? BMJ Best Pract. Available: <https://bestpractice.bmj.com/info/toolkit/learn-ebm/what-is-grade/> [Accessed 23 Nov 2020].
- 8 GRADE Working Group. GRADE publications, 2020. Available: <https://www.gradeworkinggroup.org/> [Accessed 15 Aug 2020].
- 9 Siemieniuk R. Rapid recommendations: improving the efficiency and trustworthiness of systematic reviews and guidelines, 2020. Available: <http://hdl.handle.net/11375/25540>
- 10 Brouwers MC, Kho ME, Browman GP, et al. AGREE II: advancing Guideline development, reporting and evaluation in health care. *Can Med Assoc J* 2010;182:E839–42.
- 11 AGREE Next Steps Consortium. The AGREE II Instrument [Electronic version]., 2017. Available: <http://www.agreetrust.org> [Accessed 14 Jul 2020].
- 12 AGREE Collaboration. Development and validation of an international appraisal instrument for assessing the quality of clinical practice guidelines: the AGREE project. *Qual Saf Health Care* 2003;12:18–23.
- 13 Trevisiol C, Cinquini M, Fabricio ASC, et al. Insufficient uptake of systematic search methods in oncological clinical practice guideline: a systematic review. *BMC Med Res Methodol* 2019;19:180.
- 14 Plöderl M, Hengartner MP. Guidelines for the pharmacological acute treatment of major depression: conflicts with current evidence as demonstrated with the German S3-guidelines. *BMC Psychiatry* 2019;19:265.
- 15 Maes-Carballo M, Mignini L, Martín-Díaz M, et al. Quality and reporting of clinical guidelines for breast cancer treatment: a systematic review. *Breast* 2020;53:201–11.
- 16 WHO. WHO/Europe brief – transgender health in the context of ICD-11. Available: <https://www.euro.who.int/en/health-topics/health-determinants/gender/gender-definitions/who-europe-brief-transgender-health-in-the-context-of-icd-11> [Accessed 16 Jul 2020].
- 17 Butler G, De Graaf N, Wren B, et al. Assessment and support of children and adolescents with gender dysphoria. *Arch Dis Child* 2018;103:631–6.
- 18 Kaltiala-Heino R, Bergman H, Työläjärvi M, et al. Gender dysphoria in adolescence: current perspectives. *Adolesc Health Med Ther* 2018;9:31–41.
- 19 de Freitas LD, Léda-Rêgo G, Bezerra-Filho S, et al. Psychiatric disorders in individuals diagnosed with gender dysphoria: a systematic review. *Psychiatry Clin Neurosci* 2020;74:99–104.
- 20 Connolly D, Davies E, Lynskey M, et al. Comparing intentions to reduce substance use and willingness to seek help among transgender and cisgender participants from the global drug survey. *J Subst Abuse Treat* 2020;112:86–91.
- 21 Clements-Nolle K, Marx R, Katz M. Attempted suicide among transgender persons. *J Homosex* 2006;51:53–69.
- 22 Catelan RF, Costa AB, Lisboa CSdeM. Psychological interventions for transgender persons: a scoping review. *Int J Sex Heal* 2017;29:325–37.
- 23 Glynn TR, van den Berg JJ. A systematic review of interventions to reduce problematic substance use among transgender individuals: a call to action. *Transgend Health* 2017;2:45–59.
- 24 Poteat T, Reisner SL, Radix A. HIV epidemics among transgender women. *Curr Opin HIV AIDS* 2014;9:168–73.
- 25 Winter S, Diamond M, Green J, et al. Transgender people: health at the margins of society. *Lancet* 2016;388:390–400.
- 26 James SE, Herman JL, Rankin S. *The report of the US Transgender Survey 2015*. Washington, DC: National Center for Healthcare Equality, 2016. <https://www.transequality.org/sites/default/files/docs/USTS-Full-Report-FINAL.PDF>
- 27 Bockting WO, Miner MH, Swinburne Romine RE, et al. Stigma, mental health, and resilience in an online sample of the US transgender population. *Am J Public Health* 2013;103:943–51.
- 28 OHCHR. Discrimination and violence against individuals based on their sexual orientation and gender identity, 2015. Available: [https://ap.ohchr.org/documents/dpage\\_e.aspx?si=A/HRC/29/23](https://ap.ohchr.org/documents/dpage_e.aspx?si=A/HRC/29/23)
- 29 Reisner SL, Poteat T, Keatley J, et al. Global health burden and needs of transgender populations: a review. *Lancet* 2016;388:412–36.
- 30 Coleman E, Bockting W, Botzer M, et al. Standards of care for the health of transsexual, transgender, and gender-nonconforming people, version 7. *Int J Transgend* 2012;13:165–232.
- 31 Wylie K, Knudson G, Khan SI, et al. Serving transgender people: clinical care considerations and service delivery models in transgender health. *Lancet* 2016;388:401–11.
- 32 Dahl M, Feldman JL, Goldberg J. Endocrine therapy for transgender adults in British Columbia: suggested guidelines physical aspects of transgender endocrine therapy; 2015.
- 33 Oliphant J, Veale J, Macdonald J, et al. Guidelines for gender affirming healthcare for gender diverse and transgender children, young people and adults in Aotearoa, New Zealand. *N Z Med J* 2018;131:86–96.
- 34 Psychological Society of South Africa. *Practice guidelines for psychology professionals working with sexually- and gender-diverse people*. Johannesburg: Psychological Society of South Africa, 2017. <https://www.psyssa.com/wp-content/uploads/2018/04/PsySSA-Diversity-Competence-Practice-Guidelines-PRINT-singlesided.pdf>
- 35 UCSF Transgender Care. *Guidelines for the primary and gender-affirming care of transgender and gender nonbinary people*. 2nd edn. San Francisco: Department of Family and Community Medicine University of California San Francisco, 2016. <https://transcare.ucsf.edu/guidelines>
- 36 Deutsch MB, Radix A, Reisner S. What's in a guideline? Developing collaborative and sound research designs that substantiate best practice recommendations for transgender health care. *AMA J Ethics* 2016;18:1098–106.
- 37 Gender Identity Research and Education Society. What we do. Available: <https://www.gires.org.uk/what-we-do/improving-medical-care/> [Accessed 18 Nov 2020].
- 38 Ahmad S, Barrett J, Beaini AY, et al. Gender dysphoria services: a guide for general practitioners and other healthcare staff. *Sex Relatsh Ther* 2013;28:172–85.
- 39 Wylie K, Barrett J, Besser M, et al. Good practice guidelines for the assessment and treatment of adults with gender dysphoria. *Sex Relatsh Ther* 2014;29:154–214.
- 40 RCGP. The role of the GP in caring for gender-questioning and transgender patients. RCGP Position Statement, 2019. Available: <https://www.rcgp.org.uk/-/media/Files/Policy/A-Z-policy/2019/>



- RCGP-position-statement-providing-care-for-gender-transgender-patients-june-2019.ashx?la=en [Accessed 23 Nov 2020].
- 41 Hoffmann-Eßer W, Siering U, Neugebauer EAM, et al. Guideline appraisal with AGREE II: systematic review of the current evidence on how users handle the two overall assessments. *PLoS One* 2017;12:e0174831.
  - 42 Siering U, Eikermann M, Hausner E, et al. Appraisal tools for clinical practice guidelines: a systematic review. *PLoS One* 2013;8:e82915.
  - 43 McGowan J, Sampson M, Salzweid DM, et al. PRESS Peer Review of Electronic Search Strategies: 2015 Guideline Statement. *J Clin Epidemiol* 2016;75:40–6.
  - 44 Scottish Intercollegiate Guidelines Network. What are guidelines? Sign. Available: <https://www.sign.ac.uk/what-are-guidelines> [Accessed 16 Jul 2020].
  - 45 National Institute for Health and Care Excellence. *How NICE clinical guidelines are developed: an overview for stakeholders, the public and the NHS*. NICE, 2012.
  - 46 Institute of Medicine. *Guidelines for clinical practice: from development to use*. Washington, DC: The National Academies Press, 1992.
  - 47 Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med* 2009;6:e1000097.
  - 48 WHO. *Prevention and treatment of HIV and other sexually transmitted infections among men who have sex with men and transgender people: recommendations for a public health approach*. Geneva: World Health Organization, 2011. [https://www.who.int/hiv/pub/guidelines/msm\\_guidelines2011/en/](https://www.who.int/hiv/pub/guidelines/msm_guidelines2011/en/)
  - 49 WHO. *Guidance on oral pre-exposure prophylaxis (PrEP) for serodiscordant couples, men and transgender women who have sex with men at high risk of HIV: recommendations for use in the context of demonstration projects*. Geneva: World Health Organization, 2012. [https://www.who.int/hiv/pub/guidance\\_prep/en/](https://www.who.int/hiv/pub/guidance_prep/en/)
  - 50 WHO. Consolidated guidelines on HIV prevention, diagnosis, treatment and care for key populations, 2016 update, 2016. Available: <http://www.who.int/hiv/pub/guidelines/keypopulations/>
  - 51 Davies S, Papp VG, Antoni C. Voice and communication change for gender nonconforming individuals: giving voice to the person inside. *Int J Transgend* 2015;16:117–59.
  - 52 Gilligan T, Coyle N, Frankel RM, et al. Patient-clinician communication: American Society of Clinical Oncology Consensus Guideline. *J Clin Oncol* 2017;35:3618–32.
  - 53 Hembree WC, Cohen-Kettenis PT, Gooren L, et al. Endocrine treatment of gender-dysphoric/gender-incongruent persons: an Endocrine Society Clinical Practice Guideline. *J Clin Endocrinol Metab* 2017;102:3869–903.
  - 54 International Advisory Panel on HIV Care Continuum Optimization. IAPAC guidelines for optimizing the HIV care continuum for adults and adolescents. *J Int Assoc Provid AIDS Care* 2015;14(Suppl 1):S3–34.
  - 55 T'Sjoen G, Arcelus J, De Vries ALC, et al. European Society for Sexual Medicine Position Statement "Assessment and Hormonal Management in Adolescent and Adult Trans People, With Attention for Sexual Function and Satisfaction". *J Sex Med* 2020;17:570–84.
  - 56 Ralph D, Gonzalez-Cadavid N, Mirone V, et al. Trauma, gender reassignment, and penile augmentation. *J Sex Med* 2010;7:1657–67.
  - 57 Strang JF, Meagher H, Kenworthy L, et al. Initial clinical guidelines for co-occurring autism spectrum disorder and gender dysphoria or incongruence in adolescents. *J Clin Child Adolesc Psychol* 2018;47:105–15.
  - 58 ECDC. *European centre for disease prevention and control. public health guidance on HIV, hepatitis B and C testing in the EU/EEA: an integrated approach*. Stockholm, 2018.
  - 59 Jungwirth A, Diemer T, Kopa Z, et al. *EAU guidelines on male infertility*. European Association of Urology, 2018. <https://uroweb.org/guideline/male-infertility/>
  - 60 Thoreson N, Marks DH, Peebles JK, et al. Health insurance coverage of permanent hair removal in transgender and gender-minority patients. *JAMA Dermatol* 2020;156:561.
  - 61 Solotke MT, Liu P, Dhruva SS, et al. Medicare prescription drug plan coverage of hormone therapies used by transgender individuals. *LGBT Health* 2020;7:137–45.
  - 62 Fraser L, Knudson G. Past and future challenges associated with standards of care for gender transitioning clients. *Psychiatr Clin North Am* 2017;40:15–27.
  - 63 Shuster SM. Uncertain expertise and the limitations of clinical guidelines in transgender healthcare. *J Health Soc Behav* 2016;57:319–32.
  - 64 Velho I, Figuera TM, Ziegelmann PK, et al. Effects of testosterone therapy on BMI, blood pressure, and laboratory profile of transgender men: a systematic review. *Andrology* 2017;5:881–8.
  - 65 Maraka S, Singh Ospina N, Rodriguez-Gutierrez R, et al. Sex steroids and cardiovascular outcomes in transgender individuals: a systematic review and meta-analysis. *J Clin Endocrinol Metab* 2017;102:3914–23.
  - 66 Connolly D, Hughes X, Berner A. Barriers and facilitators to cervical cancer screening among transgender men and non-binary people with a cervix: a systematic narrative review. *Prev Med* 2020;135:106071.
  - 67 Lei X, Liu F, Luo S, et al. Evaluation of guidelines regarding surgical treatment of breast cancer using the AGREE instrument: a systematic review. *BMJ Open* 2017;7:e014883.
  - 68 Bhatt M, Nahari A, Wang P-W, et al. The quality of clinical practice guidelines for management of pediatric type 2 diabetes mellitus: a systematic review using the AGREE II instrument. *Syst Rev* 2018;7:193.
  - 69 Bazzano AN, Green E, Madison A, et al. Assessment of the quality and content of national and international guidelines on hypertensive disorders of pregnancy using the AGREE II instrument. *BMJ Open* 2016;6:e009189.
  - 70 MacQueen G, Santaguida P, Keshavarz H, et al. Systematic review of clinical practice guidelines for failed antidepressant treatment response in major depressive disorder, dysthymia, and subthreshold depression in adults. *Can J Psychiatry* 2017;62:11–23.
  - 71 Alonso-Coello P, Irfan A, Solà I, et al. The quality of clinical practice guidelines over the last two decades: a systematic review of guideline appraisal studies. *Qual Saf Health Care* 2010;19:e58.
  - 72 Bewley S. What inhibits obstetricians implementing reliable guidelines? *BJOG* 2020;127:798.
  - 73 Grilli R, Magrini N, Penna A, et al. Practice guidelines developed by specialty societies: the need for a critical appraisal. *Lancet* 2000;355:103–6.
  - 74 Welch VA, Akl EA, Guyatt G, et al. GRADE Equity Guidelines 1: considering health equity in GRADE Guideline development: introduction and rationale. *J Clin Epidemiol* 2017;90:59–67.
  - 75 Akl EA, Welch V, Pottie K, et al. GRADE Equity Guidelines 2: considering health equity in GRADE Guideline development: equity extension of the Guideline Development Checklist. *J Clin Epidemiol* 2017;90:68–75.
  - 76 Welch VA, Akl EA, Pottie K, et al. GRADE Equity Guidelines 3: considering health equity in GRADE Guideline development: rating the certainty of synthesized evidence. *J Clin Epidemiol* 2017;90:76–83.
  - 77 Pottie K, Welch V, Morton R, et al. GRADE Equity Guidelines 4: considering health equity in GRADE Guideline development: evidence to decision process. *J Clin Epidemiol* 2017;90:84–91.
  - 78 Haupt C, Henke M, Kutschmar A, et al. Antiandrogen or estradiol treatment or both during hormone therapy in transitioning transgender women. *Cochrane Database Syst Rev* 2020;11:CD013138.
  - 79 Ioannidis JPA. Professional societies should abstain from authorship of guidelines and disease definition statements. *Circ Cardiovasc Qual Outcomes* 2018;11:e004889.
  - 80 Ioannidis JPA. Guidelines do not entangle practitioners with unavoidable conflicts as authors, and when there is no evidence, just say so. *Circulation* 2018;111.
  - 81 James Lind Alliance. About priority setting partnerships. Available: <http://www.jla.nihr.ac.uk/about-the-james-lind-alliance/about-psps.htm> [Accessed 8 Jul 2020].
  - 82 Thomas J, Kneale D, McKenzie J. Chapter 2: Determining the scope of the review and the questions it will address. In: Higgins J, Thomas J, Chandler J, eds. *Cochrane Handbook for systematic reviews of interventions*. Cochrane, 2020. [www.training.cochrane.org/handbook](http://www.training.cochrane.org/handbook)
  - 83 Royal College of Physicians. *Gender identity healthcare credentials (GIH)*. London: RCP, 2020. <https://www.rcplondon.ac.uk/education-practice/courses/gender-identity-healthcare-credentials-gih>
  - 84 Schünemann HJ, Wiercioch W, Brozek J, et al. GRADE evidence to decision (ETD) frameworks for adoption, adaptation, and de novo development of trustworthy recommendations: GRADE-ADOLOPMENT. *J Clin Epidemiol* 2017;81:101–10.
  - 85 Dunford C, Gresty H, Takhar M, et al. Transgender and adolescence: is online information accurate or mis-leading? *Eur Urol Suppl* 2019;18:e1782.
  - 86 Harding Center for Risk Literacy. Fact boxes. Available: <https://www.hardingcenter.de/en/fact-boxes> [Accessed 8 Jul 2020].
  - 87 Winton Centre for Risk and Evidence Communication. Available: <https://wintoncentre.maths.cam.ac.uk/> [Accessed 8 Jul 2020].



Marci L. Bowers, M.D.

(650) 570-2270

[Schedule Surgery](#) | [Gender Affirming Vaginoplasty \(GAV\)](#) | [Revision](#) | [Orchiectomy](#) | [Tracheal Shave](#)  
[Resources](#) | [Marci Bowers, MD](#) | [About the Practice](#) | [Contact Us](#)

**Exhibit  
SL 11**

Dear colleagues, clients and friends,



Regarding the 10/4/21 article by Abigail Shrier, I remain disappointed by the tone and intent of the article. My comments were taken out of context and used to cast doubt upon trans care, particularly the use of puberty blockers. Worse, Jazz

[Search this site](#)

[Privacy Policy](#)

[Contact](#)

Jennings was disrespectfully and erroneously portrayed as a puberty blockade failure, based solely upon her television portrayal. That said, the author conveyed to me that she is *not against* the use of puberty blockade but rather, interested in better informed consent, a principle upon which we both agreed. I did believe that my comments would be conveyed fairly.

My comments were limited to transfeminine persons, not transmasculine, a point not made.

My concerns regarding consent included long term sexual function, data that we currently do not know, although patients retain sensation including clitoris and G-spot. Sexual naivete is a potential concern but not central to my argument and it is far from certain that patients will sustain permanent sexual dysfunction. It is still possible that adults with a history of puberty blockade will go on to have satisfying sexual lives, but these patients need to be tracked and this measure documented.

My concerns regarding fertility are secondary, a potential that many transfeminine persons are willing to forego.

My concerns regarding puberty blockade and its negative impact upon later genital surgery remain and are not allayed by new techniques of vaginoplasty including peritoneal pull through. Complications and challenges for these patients are without a doubt, increased.

My hope is that colleagues, onlookers and members of the transgender community at large will recognize my long-term contributions to the field, my unwavering advocacy for patients, the 'one off' regarding this article—wrong time, wrong venue. Although my comments were my own professional opinions, I do recognize that, as President-elect, I now speak for WPATH as well. I have learned from this experience and will be better. I also hope that my comments will help future clinicians, families and patients make more certain, informed choices. I believe that this moment will spur studies, will inspire surgeons to seek better results, and encourage families to consider a bit of puberty when weighing treatment options.

What I hope for, most of all, is that my out-of-context comments will not be excerpted to weaponize ongoing attacks upon transgender persons. We have been here since the beginning of time and will be here in the future. We must not allow the critics and skeptics to undo our legitimacy. Rather than attack one another, we are best served by our support of WPATH and its goal of establishing evidence-based care that affirms gender identity as another important aspect of global diversity.

For patients and families seeking guidance going forward, I will say this based upon my own professional experience:

- consider consultation with a gender surgeon prior to blockers. Not all puberty blocked individuals will have insufficient growth going into blockers though puberty may be deemed beneficial for some
- If you can possibly stand a bit of puberty, the extra genital skin growth, likely orgasm and potential fertility may be attractive enough to consider the option. Early post-pubertal kids in their early teens still transition extremely well

For doubters, conservatives, naysayers and haters who continue to misgender, mischaracterize and malign trans persons around the globe, you've lost credibility with me, and likely, with God above.

Marci L. Bowers, MD

← *60 Minutes Overtime Interview*

*Detransition, Baby: Examining Factors Leading to ‘Detransitioning’  
and Regret in the Transgender Community →*

Copyright ©2022 Marci L. Bowers, M.D. | Transfeminine · 345 Lorton Ave,  
Suite 101 · Burlingame , CA 94010 · (650) 570-2270

[Privacy Policy](#) [Contact](#)

# Gender Dysphoria and Gender Reassignment Surgery

CAG-00446N

**Exhibit  
SL 12**

## Decision Summary

Currently, the local Medicare Administrative Contractors (MACs) determine coverage of gender reassignment surgery on a case-by-case basis. We received a complete, formal request to make a national coverage determination on surgical remedies for gender identity disorder (GID), now known as gender dysphoria. The Centers for Medicare & Medicaid Services (CMS) is not issuing a National Coverage Determination (NCD) at this time on gender reassignment surgery for Medicare beneficiaries with gender dysphoria because the clinical evidence is inconclusive for the Medicare population.

In the absence of a NCD, coverage determinations for gender reassignment surgery, under section 1862(a)(1)(A) of the Social Security Act (the Act) and any other relevant statutory requirements, will continue to be made by the local MACs on a case-by-case basis. To clarify further, the result of this decision is not national non-coverage rather it is that no national policy will be put in place for the Medicare program. In the absence of a national policy, MACs will make the determination of whether or not to cover gender reassignment surgery based on whether gender reassignment surgery is reasonable and necessary for the individual beneficiary after considering the individual's specific circumstances. For Medicare beneficiaries enrolled in Medicare Advantage (MA) plans, the initial determination of whether or not surgery is reasonable and necessary will be made by the MA plans.

Consistent with the request CMS received, the focus of this National Coverage Analysis (NCA) was gender reassignment surgery. Specific types of surgeries were not individually assessed. We did not analyze the clinical evidence for counseling or hormone therapy treatments for gender dysphoria. As requested by several public commenters, we have modified our final decision memorandum to remove language that was beyond the scope of the specific request. We are not making a national coverage determination related to counseling, hormone therapy treatments, or any other potential treatment for gender dysphoria.

While we are not issuing a NCD, CMS encourages robust clinical studies that will fill the evidence gaps and help inform which patients are most likely to achieve improved health outcomes with gender reassignment surgery, which types of surgery are most appropriate, and what types of physician criteria and care setting(s) are needed to ensure that patients achieve improved health outcomes.

## Decision Memo



To: Administrative File: CAG #00446N

From: Tamara Syrek Jensen, JD  
Director, Coverage and Analysis Group

Joseph Chin, MD, MS  
Deputy Director, Coverage and Analysis Group

James Rollins, MD, PhD  
Director, Division of Items and Devices

Elizabeth Koller, MD  
Lead Medical Officer

Linda Gousis, JD  
Lead Analyst

Katherine Szarama, PhD  
Analyst

Subject: Final Decision Memorandum on Gender Reassignment Surgery for Medicare Beneficiaries with Gender Dysphoria

Date: August 30, 2016

## I. Decision

Currently, the local Medicare Administrative Contractors (MACs) determine coverage of gender reassignment surgery on a case-by-case basis. We received a complete, formal request to make a national coverage determination on surgical remedies for gender identity disorder (GID), now known as gender dysphoria. The Centers for Medicare & Medicaid Services (CMS) is not issuing a National Coverage Determination (NCD) at this time on gender reassignment surgery for Medicare beneficiaries with gender dysphoria because the clinical evidence is inconclusive for the Medicare population.

In the absence of a NCD, coverage determinations for gender reassignment surgery, under section 1862(a)(1)(A) of the Social Security Act (the Act) and any other relevant statutory requirements, will continue to be made by the local MACs on a case-by-case basis. To clarify further, the result of this decision is not national non-coverage rather it is that no national policy will be put in place for the Medicare program. In the absence of a national policy, MACs will make the determination of whether or not to cover gender reassignment surgery based on whether gender reassignment surgery is reasonable and necessary for the individual beneficiary after considering the individual's specific circumstances. For Medicare beneficiaries enrolled in Medicare Advantage (MA) plans, the initial determination of whether or not surgery is reasonable and necessary will be made by the MA plans.

Consistent with the request CMS received, the focus of this National Coverage Analysis (NCA) was gender reassignment surgery. Specific types of surgeries were not individually assessed. We did not analyze the clinical evidence for counseling or hormone therapy treatments for gender dysphoria. As requested by several public commenters, we have modified our final decision memorandum to remove language that was beyond the scope of the specific request. We are not making a national coverage determination related to counseling, hormone therapy treatments, or any other potential treatment for gender dysphoria.

While we are not issuing a NCD, CMS encourages robust clinical studies that will fill the evidence gaps and help inform which patients are most likely to achieve improved health outcomes with gender reassignment surgery, which types of surgery are most appropriate, and what types of physician criteria and care setting(s) are needed to ensure that patients achieve improved health outcomes.

## II. Background

Below is a list of acronyms used throughout this document.

AHRQ - Agency for Healthcare Research and Quality  
AIDS - Acquired Immune Deficiency Syndrome  
ANOVA - Analysis of Variance  
APA - American Psychiatric Association  
APGAR - Adaptability, Partnership Growth, Affection, and Resolve test  
BIQ - Body Image Questionnaire  
BSRI - Bem Sex Role Inventory  
CCEI - Crown Craps Experimental Index  
CDC - Centers for Disease Control  
CHIS - California Health Interview Survey  
CI - Confidence Interval  
CMS - Centers for Medicare & Medicaid Services  
DAB - Departmental Appeals Board  
DSM - Diagnostic and Statistical Manual of Mental Disorders  
EMBASE - Excerpta Medica dataBASE  
FBcK - Fragebogen zur Beurteilung des eigenen Körpers  
FDA - Food and Drug Administration  
FPI-R - Freiburg Personality Inventory  
FSFI - Female Sexual Function Index  
GAF - Global Assessment of Functioning  
GID - Gender Identity Disorder  
GIS - Gender Identity Trait Scale  
GRS - Gender Reassignment Surgery  
GSI - Global Severity Indices  
HADS - Hospital Anxiety Depression Scale  
HHS - U.S. Department of Health and Human Services  
HIV - Human Immunodeficiency Virus  
IIP - Inventory of Interpersonal Problems  
IOM - Institute of Medicine  
KHQ - King's Health Questionnaire  
LGB - Lesbian, Gay, and Bisexual  
LGBT - Lesbian, Gay, Bisexual, and Transgender  
MAC - Medicare Administrative Contractor  
MMPI - Minnesota Multiphasic Personality Inventory  
NCA - National Coverage Analysis  
NCD - National Coverage Determination  
NICE - National Institute for Health Care Excellence  
NIH - National Institutes of Health  
NZHTA - New Zealand Health Technology Assessment  
PIT - Psychological Integration of Trans-sexuals  
QOL - Quality of Life  
S.D. - Standard Deviation  
SADS - Social Anxiety Depression Scale  
SCL-90R - Symptom Check List 90-Revised  
SDPE - Scale for Depersonalization Experiences  
SES - Self Esteem Scale  
SF - Short Form  
SMR - Standardized Mortality Ratio SOC - Standards of Care  
STAI-X1 - Spielberger State and Trait Anxiety Questionnaire  
STAI-X2 - Spielberger State and Trait Anxiety Questionnaire  
TSCS - Tennessee Self-Concept Scale  
U.S. - United States

VAS - Visual Analog Scale

WHOQOL-BREF - World Health Organization Quality of Life - Abbreviated version of the WHOQOL-100

WPATH - World Professional Association for Transgender Health

## A. Diagnostic Criteria

The criteria for gender dysphoria or spectrum of related conditions as defined by the American Psychiatric Association (APA) in the Diagnostic and Statistical Manual of Mental Disorders (DSM) has changed over time (See Appendix A).

Gender dysphoria (previously known as gender identity disorder) is a classification used to describe persons who experience significant discontent with their biological sex and/or gender assigned at birth. Although there are other therapeutic options for gender dysphoria, consistent with the NCA request, this decision only focuses on gender reassignment surgery.

## B. Prevalence of Transgender Individuals

For estimates of transgender individuals in the U.S., we looked at several studies.

The Massachusetts Behavior Risk Factor Surveillance Survey (via telephone) (2007 and 2009) identified 0.5% individuals as transgender (Conron et al., 2012).

Derivative data obtained from the 2004 California Lesbian Gay Bisexual and Transgender (LGBT) Tobacco Survey (via telephone) and the 2009 California Health Interview Survey (CHIS) (via telephone) suggested the LGB population constitutes 3.2% of the California population and that transgender subjects constitute approximately 2% of the California LGBT population and 0.06% of the overall California population (Bye et al., 2005; CHIS 2009; Gates, 2011).

Most recently, the Williams Institute published a report that utilized data from the Centers for Disease Control's (CDC) Behavioral Risk Factor Surveillance System (BRFSS). Overall, they found that 0.6% or 1.4 million U.S. adults identify as transgender. The report further estimated 0.7% of adults between the ages of 18-25 identify as transgender, 0.6% of adults between the ages of 25-65 identify as transgender, and 0.5% of adults age 65 or older identify as transgender (Flores et al., 2016).

In a recent review of Medicare claims data, CMS estimated that in calendar year 2013 there were at least 4,098 transgender beneficiaries (less than 1% of the Medicare population) who utilized services paid for by Medicare, of which 90% had confirmatory diagnosis, billing codes, or evidence of a hormone therapy prescription. The Medicare transgender population is racially and ethnically diverse (e.g., 74% White, 15% African American) and spans the entire country. Nearly 80% of transgender beneficiaries are under age 65, including approximately 23% ages 45-54. (CMS Office of Minority Health 2015).

For international comparison purposes, recent estimates of transgender populations in other countries are similar to those in the United States. New Zealand researchers, using passport data, reported a prevalence of 0.0275% for male-to-female adults and 0.0044% female-to-male adults (6:1 ratio) (Veale, 2008). Researchers from a centers of transgender treatment and reassignment surgery in Belgium conducted a survey of regional plastic surgeons and reported a prevalence of 0.008% male-to-female and 0.003% female-to-male (ratio 2.7:1) surgically reassigned transsexuals in Belgium (De Cuypere et al., 2007). Swedish researchers, using national mandatory reporting data on those requesting reassignment surgery, reported secular changes over time in that the number of completed reassignment surgeries per application increased markedly in the 1990s; the male-to-female/female-to-male sex ratio changed from 1:1 to 2:1; the age of male-to-female and female-to-male applicants was initially similar, but increased by eight years for male-to-female applicants; and the proportion of foreign born applicants increased (Olsson and Moller 2003).

## III. History of Medicare Coverage

Date

Action

August 1, 1989	CMS published the initial NCD, titled "140.3, Transsexual Surgery" in the Federal Register. (54 Fed. Reg. 34,555, 34,572)
May 30, 2014	The HHS Departmental Appeals Board (DAB) determined that the NCD denying coverage for all transsexual surgery was not valid. As a result, MACs determined coverage on a case-by-case basis.

CMS does not currently have a NCD on gender reassignment surgery.

#### A. Current Request

On December 3, 2015, CMS accepted a formal complete request from a beneficiary to initiate a NCA for gender reassignment surgery.

CMS opened this National Coverage Analysis (NCA) to thoroughly review the evidence to determine whether or not gender reassignment surgery may be covered nationally under the Medicare program.

#### B. Benefit Category

Medicare is a defined benefit program. For an item or service to be covered by the Medicare program, it must fall within one of the statutorily defined benefit categories as outlined in the Act. For gender reassignment surgery, the following are statutes are applicable to coverage:

Under §1812 (Scope of Part A) Under §1832 (Scope of Part B)  
Under §1861(s) (Definition of Medical and Other Health Services)  
Under §1861(s)(1) (Physicians' Services)

This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service.

## IV. Timeline of Recent Activities

#### Timeline of Medicare Coverage Policy Actions for Gender Reassignment Surgery

Date	Action
December 3, 2015	CMS accepts an external request to open a NCD. A tracking sheet was posted on the web site and the initial 30 day public comment period commenced.
January 2, 2016	Initial comment period closed. CMS received 103 comments.
June 2, 2016	Proposed Decision Memorandum posted on the web site and the final 30 day public comment period commenced.
July 2, 2016	Final comment period closed. CMS received 45 comments.

## V. FDA Status

Surgical procedures per se are not subject to the Food and Drug Administration's (FDA) approval.

Inflatable penile prosthetic devices, rigid penile implants, testicular prosthetic implants, and breast implants have been approved and/or cleared by the FDA.

## VI. General Methodological Principles

In general, when making national coverage determinations, CMS evaluates relevant clinical evidence to determine whether or not the evidence is of sufficient quality to support a finding that an item or service is reasonable and necessary for the diagnosis or treatment of illness or injury or to improve the functioning of a malformed body member.

(§ 1862 (a)(1)(A)). The evidence may consist of external technology assessments, internal review of published and unpublished studies, recommendations from the Medicare Evidence Development & Coverage Advisory Committee (MEDCAC), evidence-based guidelines, professional society position statements, expert opinion, and public comments.

The overall objective for the critical appraisal of the evidence is to determine to what degree we are confident that: 1) specific clinical question relevant to the coverage request can be answered conclusively; and 2) the extent to which we are confident that the intervention will improve health outcomes for patients.

A detailed account of the methodological principles of study design the agency staff utilizes to assess the relevant literature on a therapeutic or diagnostic item or service for specific conditions can be found in Appendix B. In general, features of clinical studies that improve quality and decrease bias include the selection of a clinically relevant cohort, the consistent use of a single good reference standard, blinding of readers of the index test, and reference test results.

## VII. Evidence

### A. Introduction

Below is a summary of the evidence we considered during our review, primarily articles about clinical trials published in peer-reviewed medical journals. We also considered articles cited by the requestor, articles identified in public comments, as well as those found by a CMS literature review. Citations are detailed below.

### B. Literature Search Methods

CMS staff extensively searched for primary studies for gender dysphoria. The emphasis focused less on specific surgical techniques and more on functional outcomes unless specific techniques altered those types of outcomes.

The reviewed evidence included articles obtained by searching literature databases and technology review databases from PubMed (1965 to current date), EMBASE, the Agency for Healthcare Research and Quality (AHRQ), the Blue Cross/Blue Shield Technology Evaluation Center, the Cochrane Collection, the Institute of Medicine, and the National Institute for Health and Care Excellence (NICE) as well as the source material for commentary, guidelines, and formal evidence-based documents published by professional societies. Systematic reviews were used to help locate some of the more obscure publications and abstracts.

Keywords used in the search included: Trans-sexual, transgender, gender identity disorder (syndrome), gender dysphoria and/or hormone therapy, gender surgery, genital surgery, gender reassignment (surgery), sex reassignment (surgery) and/or quality of life, satisfaction-regret, psychological function (diagnosis of mood disorders, psychopathology, personality disorders), suicide (attempts), mortality, and adverse events-reoperations. After the identification of germane publications, CMS also conducted searches on the specific psychometric instruments used by investigators.

Psychometric instruments are scientific tools used to measure individuals' mental capabilities and behavioral style. They are usually in the form of questionnaires that numerically capture responses. These tools are used to create a psychological profile that can address questions about a person's knowledge, abilities, attitudes and personality traits. In the evaluation of patients with gender dysphoria, it is important that both validity and reliability be assured in the construction of the tool (validity refers to how well the tool actually measures what it was designed to measure, or how well it reflects the reality it claims to represent, while reliability refers to how accurately results of the tool would be replicated in a second identical piece of research). Reliability and validity are important because when evaluating patients with gender dysphoria most of the variables of interest (e.g., satisfaction, anxiety, depression) are latent in nature (not directly observed but are rather inferred) and difficult to quantify objectively.

Studies with robust study designs and larger, defined patient populations assessed with objective endpoints or validated test instruments were given greater weight than small, pilot studies. Reduced consideration was given to studies that were underpowered for the assessment of differences or changes known to be clinically important. Studies with fewer than 30 patients were reviewed and delineated, but excluded from the major analytic framework. Oral presentations, unpublished white papers, and case reports were excluded. Publications in languages other than English were excluded.

The CMS initial internal search for the proposed decision memorandum was limited to articles published prior to March 21, 2016. The CMS internal search for the final decision memorandum continued through articles published prior to July 22, 2016.

Included studies were limited to those with adult subjects. Review and discussion of the management of children and adolescents with the additional considerations of induced pubertal delay are outside the scope of this NCD. In cases where the same population was studied for multiple reasons or where the patient population was expanded over time, the latest and/or most germane sections of the publications were analyzed. The excluded duplicative publications are delineated.

CMS also searched Clinicaltrials.gov to identify relevant clinical trials. CMS looked at trial status including early termination, completed, ongoing with sponsor update, and ongoing with estimated date of completion. Publications on completed trials were sought. For this final decision, CMS also reviewed all evidence submitted via public comment.

### C. Discussion of Evidence

The development of an assessment in support of Medicare coverage determinations is based on the same general question for almost all national coverage analyses (NCAs): "Is the evidence sufficient to conclude that the application of the item or service under study will improve health outcomes for Medicare patients?" For this specific NCA, CMS is interested in answering the following question:

*Is there sufficient evidence to conclude that gender reassignment surgery improves health outcomes for Medicare beneficiaries with gender dysphoria?*

The evidence reviewed is directed towards answering this question.

#### 1. Internal Technology Assessment

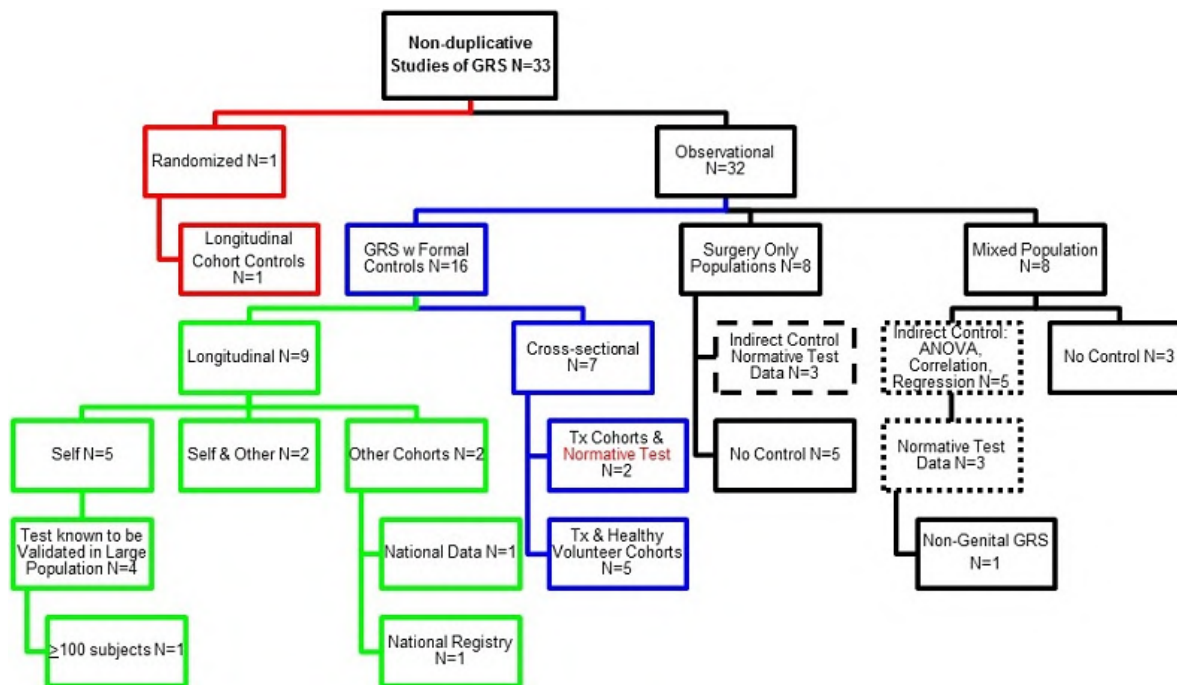
CMS conducted an extensive literature search on gender reassignment related surgical procedures and on facets of gender dysphoria that provide context for this analysis. The latter includes medical and environmental conditions.

CMS identified numerous publications related to gender reassignment surgery. A large number of these were case reports, case series with or without descriptive statistics, or studies with population sizes too small to conduct standard parametric statistical analyses. Others addressed issues of surgical technique.

CMS identified and described 36 publications on gender reassignment surgery that included health outcomes. Because the various investigators at a site sometimes conducted serial studies on ever-enlarging cohort populations, studied sub-populations, studied different outcomes, or used different tools to study the same outcomes, not all study populations were unique. To reduce bias from over-lapping populations, only the latest or most germane publication(s) were described. Subsumed publications were delineated.

Of these 36 publications, two publications used different assessment tools on the same population, and, so for the purposes of evaluation, were classified as one study (Udeze et al., 2008; Megeri and Khoosal, 2007). A total of 33 studies were reviewed (See Figure 1). Appendices C, D, and F include more detail of each study. The publications covered a time span from 1979 to 2015. Over half of the studies were published after 2005.

Figure 1. Studies of Gender Reassignment Surgery (GRS)



ANOVA=Analysis of Variance Normative=Psychometric Tests with known normative for large populations

Figure 1 Legend: The studies in Figure 1 are categorized into three groups. The first group, depicted by the colored boxes (red, blue, and green), had explicit controls. There was a single randomized study. The remainder in the first group were observational studies. These were subdivided into longitudinal studies and cross-sectional studies. The second group, depicted by black boxes (starting with the surgery only population box) consisted of surgical series. The third group, depicted by black boxes (starting with mixed population), was composed of patients whose treatment could involve a variety of therapeutic interventions, but who were not stratified by that treatment.

When looking at the totality of studies, the 33 studies could be characterized by the following research design groups:

**a. Observational, mixed population of surgical and non-surgical patients without stratification**

*Asscheman H, Giltay EJ, Megens JA, de Ronde WP, van Trotsenburg MA, Gooren LJ. A long-term follow-up study of mortality in transsexuals receiving treatment with cross-sex hormones. Eur J Endocrinol. 2011 Apr;164(4):635-42. Epub 2011 Jan 25.*

Asscheman et al. conducted a retrospective, non-blinded, observational study of mortality using a longitudinal design to assess a mixed population treated with hormones, as well as, reassignment surgery in comparison to a population-based cohort. The study was not designed to assess the specific impact of gender reassignment surgery on clinical outcomes.

The investigators assessed mortality in patients who (a) were from a single-center, unspecified, Dutch university specialty clinic, (b) had initiated cross-sex hormone treatment prior to July 1, 1997, and (c) had been followed (with or without continued hormone treatment) by the clinic for at least one year or had expired during the first year of treatment. The National Civil Record Registry (Gemeentelijke Basis Administratie) was used to identify/confirm deaths of clinic patients. Information on the types or hormones used was extracted from clinic records, and information on the causation of death was extracted from medical records or obtained from family physicians. Mortality data for the general population were obtained through the Central Bureau of Statistics of the Netherlands (Centraal Bureau voor de Statistiek). Mortality data from Acquired Immune Deficiency Syndrome (AIDS) and substance abuse were extracted from selected Statistics Netherlands reports. The gender of the general Dutch population comparator group was the natal sex of the respective gender dysphoric patient groups.

A total of 1,331 patients who met the hormone treatment requirements were identified (365 female-to-male [27.4%]; 966 male- to-female [72.6%]; ratio 1:2.6). Of these, 1,177 (88.4%) underwent reassignment surgery (343 [94.0% of female-to-male entrants]; 834 [86.3% of male-to-female entrants]; ratio difference 1:2.4 with a p-value  $p < 0.0001$ ). Later



calculations did not distinguish between those with hormone therapy alone versus those with hormone therapy plus reassignment surgery. The mean age at the time of hormone initiation in female-to-male and male-to-female patients was  $26.1 \pm 7.6$  (range 16–56) years and  $31.4 \pm 11.4$  (range 16–76) years respectively, although the male-to-female subjects were relatively older ( $p < 0.001$ ). The mean duration of hormone therapy in female-to-male and male-to-female patients was  $18.8 \pm 6.3$  and  $19.4 \pm 7.7$  years respectively.

There were a total of 134 deaths in the clinic population using hormone therapy with or without surgical reassignment. Of these patients, 12 (3.3%) of the 365 female-to-male patients and 122 (12.6%) of the 966 male-to-female patients died. All-cause mortality for this mixed population was 51% higher and statistically significant (Standardized Mortality Ratio [SMR] 95% confidence interval [CI] 1.47–1.55) for males-to-females when compared to males in the general Dutch population. The increase in all-cause mortality (12%) for females-to-males when compared to females in the general Dutch population was not statistically significant (95% CI 0.87–1.42).

Ischemic heart disease was a major disparate contributor to excess mortality in male-to-female patients but only in older patients ( $n=18$ , SMR 1.64 [95% CI 1.43–1.87]), mean age [range]: 59.7 [42–79] years. Current use of a particular type of estrogen, ethinyl estradiol, was found to contribute to death from myocardial infarction or stroke (Adjusted Hazard Ratio 3.12 [95% CI 1.28–7.63],  $p=0.01$ ). There was a small, but statistically significant increase in lung cancer that was thought to possibly be related to higher rates of smoking in this cohort.

Other contributors to the mortality difference between male-to-female patients and the Dutch population at large were completed suicide ( $n=17$ , SMR 5.70 [95% CI 4.93–6.54]), AIDS ( $n=16$ , SMR 30.20 [95% CI 26.0–34.7]), and illicit drug use ( $n=5$ , SMR 13.20 [95% CI 9.70–17.6]). An additional major contributor was “unknown cause” ( $n=21$ , SMR 4.00 [95% CI 3.52–4.51]). Of the 17 male-to-female hormone treated patients who committed suicide, 13 (76.5%) had received prior psychiatric treatment and six (35.3%) had not undergone reassignment surgery because of concerns about mental health stability.

Overall mortality, and specifically breast cancer and cardiovascular disease, were not increased in the hormone-treated female-to-male patients. Asscheman et al. reported an elevated SMR for illicit drug use ( $n=1$ , SMR 25 [6.00–32.5]). This was the cause of one of the 12 deaths in the cohort.

This study subsumes earlier publications on mortality (Asscheman et al. 1989 [ $n=425$ ]; Van Kesteren et al. 1997 [ $n=816$ ]).

*Gómez-Gil E, Zubiaurre-Elorza L, Esteva I, Guillaumon A, Godás T, Cruz Almaraz M, Halperin I, Salamero M. Hormone-treated transsexuals report less social distress, anxiety and depression. Psychoneuroendocrinology. 2012 May;37(5):662–70. Epub 2011 Sep 19.*

Gómez-Gil et al. conducted a prospective, non-blinded observational study using a cross-sectional design and non-specific psychiatric distress tools in Spain. The investigators assessed anxiety and depression in patients with gender dysphoria who attended a single-center specialty clinic with comprehensive endocrine, psychological, psychiatric, and surgical care. The clinic employed World Professional Association for Transgender Health (WPATH) guidelines. Patients were required to have met diagnostic criteria during evaluations by 2 experts. Investigators used the Hospital Anxiety and Depression Scale (HADS) and the Social Anxiety and Distress Scale (SADS) instruments. The SADS total score ranges from 0 to 28, with higher scores indicative of more anxiety. English language normative values are  $9.1 \pm 8.0$ . HAD-anxiety and HAD-depression total score ranges from 0 to 21, with higher scores indicative of more pathology. Scores less than 8 are normal. ANOVA was used to explore effects of hormone and surgical treatment.

Of the 200 consecutively selected patients recruited, 187 (93.5% of recruited) were included in the final study population. Of the final study population, 74 (39.6%) were female-to-male patients; 113 (60.4%) were male-to-female patients (ratio 1:1.5); and 120 (64.2%) were using hormones. Of those using hormones, 36 (30.0%) were female-to-male; 84 (70.0%) were male-to-female (ratio 1:2.3). The mean age was  $29.87 \pm 9.15$  years (range 15–61). The current age of patients using hormones was  $33.6 \pm 9.1$  years ( $n=120$ ) and older than the age of patients without hormone treatment ( $25.9 \pm 7.5$ ) ( $p=0.001$ ). The age at hormone initiation, however, was  $24.6 \pm 8.1$  years.



Of those who had undergone reassignment surgery, 29 (36.7%) were female-to-male; 50 (63.3%) were male-to-female (ratio 1:1.7). The number of patients not on hormones and who had undergone at least one gender-related surgical procedure (genital or non-genital) was small (n=2). The number of female-to-male patients on hormones who had undergone such surgery (mastectomy, hysterectomy, and/or phalloplasty) was 28 (77.8%). The number of male-to-female patients on hormones who had undergone such surgery (mammoplasty, facial feminization, buttock feminization, vaginoplasty, orchiectomy, and/or vocal feminization (thyroid chondroplasty) was 49 (58.3%).

Analysis of the data revealed that although the mean scores HAD-Anxiety, HAD-Depression, and SADS were statistically lower (better) in those on hormone therapy than in those not on hormone therapy, the mean scores for HAD-Depression and SADS were in the normal range for gender dysphoric patients not using hormones. The HAD-Anxiety score was 9 in transsexuals without hormone treatment and 6.4 in transsexuals with hormone treatment. The mean scores for HAD-Anxiety, HAD-Depression, and SADS were in the normal range for gender dysphoric patients using hormones. ANOVA revealed that results did not differ by whether the patient had undergone a gender related surgical procedure or not.

*Gómez-Gil E, Zubiaurre-Elorza L, de Antonio I, Guillamon A, Salamero M. Determinants of quality of life in Spanish transsexuals attending a gender unit before genital sex reassignment surgery. Qual Life Res. 2014 Mar;23(2):669-76. Epub 2013 Aug 13.*

Gómez-Gil et al. conducted a prospective, non-blinded observational study using a non-specific quality of life tool. There were no formal controls for this mixed population ± non-genital reassignment surgery undergoing various stages of treatment.

The investigators assessed quality of life in the context of culture in patients with gender dysphoria who were from a single-center (Barcelona, Spain), specialty and gender identity clinic. The clinic used WPATH guidelines. Patients were required to have met diagnostic criteria during evaluations by both a psychologist and psychiatrist. Patients could have undergone non-genital surgeries, but not genital reassignment surgeries (e.g., orchiectomy, vaginoplasty, or phalloplasty). The Spanish version of the World Health Organization Quality of Life-Abbreviated version of the WHOQOL-100 (WHOQOL-BREF) was used to evaluate quality of life, which has 4 domains (environmental, physical, psychological, and social) and 2 general questions. Family dynamics were assessed with the Spanish version of the Family Adaptability, Partnership Growth, Affection, and Resolve (APGAR) test. Regression analysis was used to explore effects of surgical treatment.

All consecutive patients presenting at the clinic (277) were recruited and, 260 (93.9%) agreed to participate. Of this number, 59 of these were excluded for incomplete questionnaires, 8 were excluded for prior genital reassignment surgery, and 193 were included in the study (the mean age of this group was 31.2±9.9 years (range 16-67). Of these, 74 (38.3%) were female-to-male patients; 119 (61.7%) were male-to-female patients (ratio1:1.6). Of these, 120 (62.2%) were on hormone therapy; 29 (39.2%) of female-to-male patients had undergone at least 1 non-genital, surgical procedure (hysterectomy n=19 (25.7%); mastectomy n=29 (39.2%)); 51 (42.9%) of male-to-female patients had undergone at least one non-genital surgical procedure with mammoplasty augmentation being the most common procedure, n=47 (39.5%), followed by facial feminization, n=11 (9.2%), buttocks feminization, n=9 (7.6%), and vocal feminization (thyroid chondroplasty), n=2 (1.7%).

WHOQOL-BREF domain scores for gender dysphoric patients with and without non-genital surgery were: "Environmental" 58.81±14.89 (range 12.50-96.88), "Physical" 63.51±17.79 (range 14.29-100), "Psychological" 56.09±16.27 (range 16.67- 56.09), "Social" 60.35±21.88 (range 8.33-100), and "Global QOL and Health" 55.44±27.18 (range 0-100 with higher score representing better QOL). The mean APGAR family score was 7.23±2.86 (range 0-10 with a score of 7 or greater indicative of family functionality).

Regression analysis, which was used to assess the relative importance of various factors to WHOQOL-BREF domains and general questions, revealed that family support was an important element for all four domains and the general health and quality-of-life questions. Hormone therapy was an important element for the general questions and for all of the domains except "Environmental." Having undergone non-genital reassignment surgery, age, educational levels, and partnership status, did not impact domain and general question results related to quality of life.

*Hepp U, Kraemer B, Schnyder U, Miller N, Delsignore A. Psychiatric comorbidity in gender identity disorder. J Psychosom Res. 2005 Mar;58(3):259-61.*

Hepp et al. conducted a single-site (Zurich, Switzerland) prospective, non-blinded, observational study using a cross-sectional design. There was some acquisition of retrospective data. The investigators assessed current and lifetime psychiatry co-morbidity using structured interviews for diagnosis of Axis 1 disorders (clinical syndromes) and Axis 2 disorders (developmental or personality disorders) and HADS for dimensional evaluation of anxiety and depression. Statistical description of the cohort and intra-group comparisons was performed. Continuous variables were compared using t-tests and ANOVA.

A total of 31 patients with gender dysphoria participated in the study: 11 (35.5%) female-to-male; 20 (64.5%) male-to-female (ratio 1:1.8). The overall mean age was  $32.2 \pm 10.3$  years. Of the participants, seven had undergone reassignment surgery, 10 pre-surgical patients had been prescribed hormone therapy, and 14 pre-surgical patients had not been prescribed hormone therapy. Forty five and one half percent of female-to-male and 20% of male-to-female patients did not carry a lifetime diagnosis of an Axis 1 condition. Sixty three and six tenths percent of female-to-male and 60% of male-to-female patients did not carry a current diagnosis of an Axis 1 condition. Lifetime diagnosis of substance abuse and mood disorder were more common in male-to-female patients (50% and 55% respectively) than female-to-male patients (36.4% and 27.3% respectively). Current diagnosis of substance abuse and mood disorder were present in male-to-female patients (15% and 20% respectively) and absent in female-to-male patients. One or more personality disorders were identified 41.9%, but whether this was a current or lifetime condition was not specified. Of the patients, five (16.1%) had a Cluster A personality disorder (paranoid-schizoid), seven (22.6%) had a Cluster B personality disorder (borderline, anti-social, histrionic, narcissistic), six (19.4%) had a Cluster C personality disorder (avoidant, dependent, obsessive-compulsive), and two (6.5%) were not otherwise classified.

HADS scores were missing for at least one person. The HADS test revealed non-pathologic results for depression (female-to-male:  $6.64 \pm 5.03$ ; male-to-female:  $6.58 \pm 4.21$ ) and borderline results for anxiety (female-to-male:  $7.09 \pm 5.11$ ; male-to-female:  $7.74 \pm 6.13$ , where a result of 7-10 = possible disorder). There were no differences by natal gender. The investigators reported a trend for less anxiety and depression as measured by HADS in the patients who had undergone surgery.

*Johansson A, Sundbom E, Höjerback T, Bodlund O. A five-year follow-up study of Swedish adults with gender identity disorder. Arch Sex Behav. 2010 Dec;39(6):1429-37. Epub 2009 Oct 9.*

Johansson et al. conducted a two center (Lund and Umeå, Sweden) non-blinded, observational study using a semi-cross-sectional design (albeit over an extended time interval) using a self-designed tool and Axis V assessment. The study was prospective except for the acquisition of baseline Axis V data. There were no formal controls in this mixed population with and without surgery.

The investigators assessed satisfaction with the reassignment process, employment, partnership, sexual function, mental health, and global satisfaction in gender-reassigned persons from two disparate geographic regions. Surgical candidates were required to have met National Board of Health and Welfare criteria including initial and periodic psychiatric assessment,  $\geq 1$  year of real-life experience in preferred gender, and  $\geq 1$  year of subsequent hormone treatment. In addition, participants were required to have been approved for reassignment five or more years prior and/or to have completed surgical reassignment (e.g., sterilization, genital surgery) two or more years prior. The investigators employed semi-structured interviews covering a self-designed list of 55 pre-formulated questions with a three or five point ordinal scale. Clinician assessment of Global Assessment of Functioning (GAF; Axis V) was also conducted and compared to initial finding during the study. Changes or differences considered to be biologically significant were not pre-specified except for GAF, which pre-specified a difference to mean change  $\geq 5$  points. Statistical corrections for multiple comparisons were not included. There was no stratification by treatment.

Of the pool of 60 eligible patients, 42 (70.0% of eligible) (17 [40.5 %] female-to-male; 25 [59.5%] male-to-female; ratio 1:1.5) were available for follow-up. Of these, 32 (53.3% of eligible) (14 [43.8%] female-to-male; 18 [56.2%] male-to-female [ratio 1:1.3]) had completed genital gender reassignment surgery (not including one post mastectomy), five were still in the process of completing surgery, and five (one female-to-male; four male-to-female; ratio 1:4) had discontinued the surgical process prior to castration and genital surgery.

The age (ranges) of the patients at entry into the program, reassignment surgery, and follow-up were 27.8 (18-46), 31.4 (22- 49), and 38.9 (28-53) years in the female-to-male group respectively and 37.3 (21-60), 38.2 (22-57), and 46.0 (25.0-69.0) years in the male- to-female group respectively. The differences in age by cohort group were statistically significant. Of participants, 88.2% of all enrolled female-to-male versus 44.0% of all enrolled female-to-male patients had cross-gender identification in childhood (versus during or after puberty) ( $p < 0.01$ ).

Although 95.2% of all enrolled patients self-reported improvement in GAF, in contrast, clinicians determined GAF improved in 61.9% of patients. Clinicians observed improvement in 47% of female-to-male patients and 72% of male-to-female patients. A  $\geq 5$  point improvement in the GAF score was present in 18 (42.9%). Of note, three of the five patients who were in the process of reassignment and five of the five who had discontinued the process were rated by clinicians as having improved.

Of all enrolled 95.2% (with and without surgery) reported satisfaction with the reassignment process. Of these 42 patients, 33 (79%) identified themselves by their preferred gender and nine (21%) identified themselves as transgender. None of these nine (eight male-to-female) had completed reassignment surgery because of ambivalence secondary to lack of acceptance by others and dissatisfaction with their appearance. Of the patients who underwent genital surgery ( $n=32$ ) and mastectomy only ( $n=one$ ), 22 (66.7%) were satisfied while four (three female-to-male) were dissatisfied with the surgical treatment.

Regarding relationships after surgery, 16 (38.1%) (41.2% of female- to-male; 36.0% of male-to-female patients) were reported to have a partner. Yet more than that number commented on partner relationships: (a) 62.2 % of the 37 who answered (50.0% of female- to- male; 69.6% of male-to-female patients) reported improved partner relationships (five [11.9%] declined to answer.); (b) 70.0% of the 40 who answered (75.0% of female-to-male; 66.7% of male-to-female patients) reported an improved sex life. Investigators observed that reported post-operative satisfaction with sex life was statistically more likely in those with early rather than late cross-gender identification. In addition 55.4% self-reported improved general health; 16.1% reported impaired general health; 11.9% were currently being treated with anti-depressants or tranquilizers.

This study subsumes earlier work by Bodlund et al. (1994, 1996). The nationwide mortality studies by Dhejne et al. (2011) may include all or part of this patient population.

*Leinung M, Urizar M, Patel N, Sood S. Endocrine treatment of transsexual persons: extensive personal experience. Endocr Pract. 2013 Jul-Aug;19(4):644-50. (United States study)*

Leinung et al. conducted a single-center (Albany, New York) a partially prospective, non-blinded, observational study using a cross-sectional design and descriptive statistics. There were no formal controls. The investigators assessed employment, substance abuse, psychiatric disease, mood disorders, Human Immunodeficiency Virus (HIV) status in patients who had met WPATH guidelines for therapy, and who had initiated cross-sex hormone treatment.

A total of 242 patients treated for gender identity disorder in the clinic from 1992 through 2009 inclusive were identified. The number of those presenting for therapy almost tripled over time. Of these patients, 50 (20.7%) were female-to-male; 192 (79.3%) male-to-female (ratio 1:3.8).

The age of female-to-male and male-to-female patients with gender dysphoria at the time of clinic presentation was 29.0 and 38.0 years respectively.

The female-to-male and male-to-female patients with gender dysphoria at the time of hormone initiation were young: 27.5 and 35.5 years old respectively ( $p < 0.5$ ). Of the male-to-female cohort, 19 (7.8%) had received hormone therapy in the absence of physician supervision; Of the patient population, 91 (37.6%) had undergone gender-reassignment surgery (32 female-to-male [64.0% of all female-to- male; 35.2% of all surgical patients]; 59 male-to-female [30.7% of all male-to-female; 64.8% of all surgical patients]; ratio 1:1.8).

Psychiatric disease was more common in those who initiated hormone therapy at an older age ( $>32$  years) 63.9% versus 48.9% at a younger age and by natal gender (48.0% of female-to-male; 58.3% male-to-female). Mood disorders were more common in those who initiated hormone therapy at an older age ( $>32$  years) 52.1% versus 36.0% at a younger age

and this finding did not differ by natal gender (40.0% of female-to-male; 44.8% male-to-female). The presence of mood disorders increased the time to reassignment surgery in male-to-female patients.

*Motmans J, Meier P, Ponnet K, T'Sjoen G. Female and male transgender quality of life: socioeconomic and medical differences. J Sex Med. 2012 Mar;9(3):743-50. Epub 2011 Dec 21.*

Motmans et al., conducted a prospective, non-blinded, observational study using a cross-sectional design and a non-specific quality of life tool. No concurrent controls were used in this study. Quality of life in this Dutch-speaking population was assessed using the Dutch version of a SF-36 (normative data was used). Participants included subjects who were living in accordance with the preferred gender and who were from a single Belgian university specialty clinic at Ghent. The Dutch version of the SF-36 questionnaire along with its normative data were used. Variables explored included employment, pension status, ability to work, being involved in a relationship. Also explored, was surgical reassignment surgery and the types of surgical interventions. Intragroup comparisons by transgender category were conducted, and the relationships between variables were assessed by analysis of variance (ANOVA) and correlations.

The age of the entire cohort (n=140) was 39.89±10.21 years (female-to-male: 37.03±8.51; male-to-female: 42.26±10.39). Results of the analysis revealed that not all female-to-male patients underwent surgical reassignment surgery and, of those who did, not all underwent complete surgical reassignment. The numbers of female-to-male surgical interventions were: mastectomy 55, hysterectomy 55, metaoidplasty eight (with five of these later having phalloplasty), phalloplasty 40, and implantation of a prosthetic erectile device 20. The frequencies of various male-to-female surgical interventions were: vaginoplasty 48, breast augmentation 39, thyroid cartilage reduction 17, facial feminization 14, and hair transplantation three.

The final number of subjects with SF-36 scores was 103 (49 [47.6%] female-to-male; 54 [52.4%] male-to-female; ratio 1:1.1). For this measure, the scores for the vitality and mental health domains for the final female-to-male cohort (n= 49 and not limited to those having undergone some element of reassignment surgery) were statistically lower: 60.61±18.16 versus 71.9±18.31 and 71.51±16.40 versus 79.3±16.4 respectively. Scores were not different from the normative data for Dutch women: vitality: 64.3±19.7 or mental health 73.7±18.2. None of the domains of the SF-36 for the final male-to-female cohort (n=54 and not limited to those having undergone some element of reassignment surgery) were statistically different from the normative data for Dutch women.

Analysis of variance indicated that quality of life as measured by the SF-36 did not differ by whether female-to-male patients had undergone genital surgery (metaoidoplasty or phalloplasty) or not. Also, ANOVA indicated that quality of life as measured by the SF-36 did not differ by whether male-to-female patients had undergone either breast augmentation or genital surgery (vaginoplasty) or not.

Whether there is overlap with the Ghent populations studied by Heylens et al. or Weyers et al. is unknown.

*Newfield E, Hart S, Dibble S, Kohler L. Female-to-male transgender quality of life. Qual Life Res. 2006 Nov;15(9):1447-57. Epub 2006 Jun 7. (United States study)*

Newfield et al. conducted a prospective, observational internet self-report survey of unknown blinding status using a cross-sectional design and a non-specific quality of life tool in a mixed population with and without hormone therapy and/or reassignment surgery. There were no formal controls.

The investigators recruited natal female participants identifying as male using email, internet bulletin boards, and flyers/postcards distributed in the San Francisco Bay Area. Reduction of duplicate entries by the same participant was limited to the use of a unique user name and password.

The investigators employed the Short-Form 36 (SF-36) Version 2 using U.S. normative data. They reported using both male and female normative data for the comparator SF-36 cohort. Data for the eight domains were expressed as normative scoring. The Bonferroni correction was used to adjust for the risk of a Type 1 error with analyses using multiple comparisons.

A total of 379 U.S. respondents classified themselves as males-or-females to males with or without therapeutic intervention. The mean age of the respondents who classified themselves as male or female-to-male was  $32.6 \pm 10.8$  years. Of these 89% were Caucasian, 3.6% Latino, 1.8% African American, 1.8% Asian, and 3.8% other. Of these, 254 (67.0%) reported prior or current testosterone use while 242 (63.8%) reported current testosterone use. In addition, 136 (36.7%) reported having had "top" surgery and 11 (2.9%) reported having "bottom" surgery.

Complete SF-36 data were available for 376 U.S. respondents. For the complete, non-stratified U.S. cohort the Physical Summary Score ( $53.45 \pm 9.42$ ) was statistically higher (better) than the natal gender unspecified SF-36 normative score ( $50 \pm 10$ ) ( $p < 0.001$ ), but was within one standard deviation of the normative mean. The Mental Summary Score ( $39.63 \pm 12.2$ ) was statistically lower (worse) than the natal gender unspecified SF-36 normative score ( $50 \pm 10$ ) ( $p < 0.001$ ), but was well within two standard deviations of the normative mean. Subcomponents of this score: Mental Health ( $42.12 \pm 10.2$ ), Role Emotional ( $42.42 \pm 11.6$ ), Social Functioning ( $43.14 \pm 10.9$ ), and Vitality ( $46.22 \pm 9.9$ ) were statistically lower (worse) than the SF-36 normative sub-scores, but well within one standard deviation of the normative sub-score means. Interpretive information for these small biologic differences in a proprietary assessment tool was not provided.

Additional intragroup analyses were conducted, although the data were not stratified by type of therapeutic intervention (hormonal, as well as, surgical). Outcomes of hormone therapy were considered separately and dichotomously from reassignment surgery. The Mental Summary Score was statistically higher (better) in those who had "Ever Received Testosterone" ( $41.22 \pm 11.9$ ) than those with "No Testosterone Usage" ( $36.08 \pm 12.6$ ) ( $p = 0.001$ ). The Mental Summary Scores showed a trend towards statistical difference between those who "Ever Received Top Surgery" ( $41.21 \pm 11.6$ ) and those without "Top Surgery" ( $38.01 \pm 12.5$ ) ( $p = 0.067$ ). These differences were well within one standard deviation of the normative mean. Interpretive information for these small biologic differences in a proprietary assessment tool was not provided.

#### **b. Observational, surgical series, without concurrent controls**

*Blanchard R, Steiner BW, Clemmensen LH. Gender dysphoria, gender reorientation, and the clinical management of transsexualism. J Consult Clin Psychol. 1985 Jun; 53(3):295-304.*

Blanchard et al. conducted a single-center (Ontario, Canada), prospective, non-blinded, cross-sectional study using a self-designed questionnaire and a non-specific psychological symptom assessment with normative data. The investigators assessed social adjustment and psychopathology in patients with gender dysphoria and who were at least one year post gender reassignment surgery. Reassignment surgery was defined as either vaginoplasty or mastectomy/construction of male chest contour with or without nipple transplants, but did not preclude additional procedures. Partner preference was determined using Blanchard's Modified Androphilia-Gynephilia Index, and the nature and extent of any psychopathology was determined with the Symptom Check List 90-Revised (SCL-90R). Differences in test scores considered to be biologically significant were not pre-specified in the methods.

Of the 294 patients (111 natal females and 183 natal males, ratio: 1:1.65) initially evaluated, 263 were diagnosed with gender dysphoria. Of these 79 patients participated in the study (38 female-to-male; 32 male-to-female with male partner preference; 9 male-to-female with female partner preference). The respective mean ages for these 3 groups were 32.6, 33.2, and 47.7 years with the last group being older statistically ( $p = 0.01$ ).

Additional surgical procedures in female-to-male patients included: oophorectomy/hysterectomy (92.1%) and phalloplasty (7.9%). Additional surgical procedures in male-to-female patients with male partner preference included facial hair electrolysis 62.5% and breast implantation (53.1%). Additional procedures in male-to-female patients with female partner preference included facial hair electrolysis (100%) and breast implantation (33.3%). The time between reassignment surgery and questionnaire completion did not differ by group.

Psychopathology as measured by the Global Severity Index of the SCL-90R was absent in all three patient groups. Interpretation did not differ by the sex of the normative cohort.

Of participants, 63.2% of female-to-male patients cohabitated with partners of their natal gender; 46.9% of male-to-female patients with male partner preference cohabitated with partners of their natal gender; and no male-to-female patients with female partner preference cohabitated with partners of their natal gender.

Of participants, 93.7% reported that they would definitely undergo reassignment surgery again. The remaining 6.3% (one female-to-male; one male-to-female with male partner preference; three male-to-female with female partner preference) indicated that they probably would undertake the surgery again. Post hoc analysis suggested that the more ambivalent responders had more recently undergone surgery. Of responders, 98.7% indicated that they preferred life in the reassigned gender. The one ambivalent subject was a skilled and well compensated tradesperson who was unable to return to work in her male dominated occupation.

*Eldh J, Berg A, Gustafsson M. Long-term follow up after sex reassignment surgery. Scand J Plast Reconstr Surg Hand Surg. 1997 Mar;31(1):39-45.*

Eldh et al. conducted a non-blinded, observational study using a prospective cross-sectional design with an investigator designed questionnaire and retrospective acquisition of pre-operative data. The investigators assessed economic circumstances, family status, satisfaction with surgical results, and sexual function in patients who had undergone gender reassignment surgery.

Of the 175 patients who underwent reassignment surgery in Sweden, 90 responded. Of this number, 50 were female-to-male and 40 were male-to-female (ratio: 1:0.8). Patients reportedly were generally satisfied with the appearance of the reconstructed genitalia (no numbers provided). Of the patients who had undergone surgery prior to 1986, seven (14%) were dissatisfied with shape or size of the neo-phallus; eight (16%) declined comment. There were 14 (35%), with 12 having surgery prior to 1986 and two between 1986 and 1995 inclusive, were moderately satisfied because of insufficient vaginal volume; 8 (20%) declined comment. A neo-clitoris was not constructed until the later surgical cohort. Three of 33 reported no sensation or no sexual sensation. Eight had difficulties comprehending the question and did not respond.

A total of nine (18%) patients had doubts about their sexual orientation; 13 (26%) declined to answer the question. The study found that two female-to-male patients and two male-to-female patients regretted their reassignment surgery and continued to live as the natal gender, and two patients attempted suicide.

*Hess J, Rossi Neto R, Panic L, Rübber H, Senf W. Satisfaction with male-to-female gender reassignment surgery. Dtsch Arztebl Int. 2014 Nov 21;111(47):795-801.*

Hess et al. conducted a prospective, blinded, observational study using a cross-sectional design and a self-designed anonymous questionnaire. The investigators assessed post-operative satisfaction in male-to-female patients with gender dysphoria who were followed in a urology specialty clinic (Essen, Germany). Patients had met the ICD-10 diagnostic criteria, undergone gender reassignment surgeries including penile inversion vaginoplasty, and a Likert-style questionnaire with 11 elements. Descriptive statistics were provided.

There were 254 consecutive eligible patients who had undergone surgery between 2004 and 2010 identified and sent surveys, of whom 119 (46.9%) responded anonymously. Of the participants, 13 (10.9%) reported dissatisfaction with outward appearance and 16 (13.4%) did not respond; three (2.5%) reported dissatisfaction with surgical aesthetics and 25 (21.0%) did not respond; eight (6.7%) reported dissatisfaction with functional outcomes of the surgery and 26 (21.8%) did not respond; 16 (13.4%) reported they could not achieve orgasm and 28 (23.5%) did not respond; four (3.4%) reported feeling completely male/more male than female and 28 (23.5%) did not respond; six (5.0%) reported not feeling accepted as a woman, two (1.7%) did not understand the question, and 17 (14.3%) did not respond; and 16 (13.4%) reported that life was harder and 24 (20.2%) did not respond.

*Lawrence A. Patient-reported complications and functional outcomes of male-to-female sex reassignment surgery. Arch Sex Behav. 2006 Dec;35(6):717-27. Epub 2006 Nov 16. (United States study)*

Lawrence conducted a prospective, blinded observational study using a cross-sectional design and a partially self-designed quality of life tool using yes/no questions or Likert scales. The investigator assessed sexual function, urinary function, and other pre/post-operative complications in patients who underwent male-to-female gender reassignment surgery. Questions addressed core reassignment surgery (neo-vagina and sensate neo-clitoris) and related reassignment surgery (labiaplasty, urethral meatus revision, vaginal deepening/widening, and other procedures), use of electrolysis, and use of hormones.



Questionnaires were designed to be completed anonymously and mailed to 727 eligible patients. Of those eligible, 232 (32%) returned valid questionnaires. The age at the time reassignment surgery was  $44 \pm 9$  (range 18-70) years and mean duration after surgery was  $3 \pm 1$  (range 1-7) years.

Happiness with sexual function and the reassignment surgery was reported to be lower when permanent vaginal stenosis, clitoral necrosis, pain in the vagina or genitals, or other complications such as infection, bleeding, poor healing, other tissue loss, other tissue necrosis, urinary incontinence, and genital numbness were present. Quality of life was impaired when pain in the vagina or genitals was present.

Satisfaction with sexual function, gender reassignment surgery, and overall QOL was lower when genital sensation was impaired and when vaginal architecture and lubrication were perceived to be unsatisfactory. Intermittent regret regarding reassignment surgery was associated with vaginal hair and clitoral pain. Vaginal stenosis was associated with surgeries performed in the more distant past; whereas, more satisfaction with vaginal depth and width was present in more recent surgical treatment.

*Salvador J, Massuda R, Andreazza T, Koff WJ, Silveira E, Kreische F, de Souza L, de Oliveira MH, Rosito T, Fernandes BS, Lobato ML. Minimum 2-year follow up of sex reassignment surgery in Brazilian male-to-female transsexuals. Psychiatry Clin Neurosci. 2012 Jun; 66(4):371-2. PMID: 22624747.*

Salvador et al. conducted a single center (Port Alegre, Brazil) prospective, non-blinded, observational study using a cross-sectional design (albeit over an extended time interval) and a self-designed quality of life tool. The investigators assessed regret, sexual function, partnerships, and family relationships in patients who had undergone gender reassignment surgery at least 24 months prior.

Out of the 243 enrolled in the clinic over a 10 year interval, 82 underwent sex reassignment surgery. There were 69 participants with a minimum 2-year follow up, of whom 52 patients agreed to participate in the study. The age at follow-up was  $36.3 \pm 8.9$  (range 15-58) years with the time to follow-up being  $3.8 \pm 1.7$  (2-7) years. A total of 46 participants reported pleasurable neo-vaginal sex and post-surgical improvement in the quality of their sexual experience. The quality of sexual intercourse was rated as satisfactory to excellent, average, unsatisfactory, or not applicable in the absence of sexual contact by 84.6%, 9.6%, 1.9%, and 3.8% respectively. Of the participants, 78.8% reported greater ease in initiating and maintaining relationships; 65.4% reported having a partner; 67.3% reported increased frequency of intercourse; 36.8% reported improved familial relationships. No patient reported regret over reassignment surgery. The authors did not provide information about incomplete questionnaires.

*Tsoi WF. Follow-up study of transsexuals after sex-reassignment surgery. Singapore Med J. 1993 Dec; 34(6):515-7.*

Tsoi conducted a single-center (Singapore) prospective, non-blinded, observational study using a cross-sectional design and a self-designed quality of life tool. The investigator assessed overall life satisfaction, employment, partner status, and sexual function in gender-reassigned persons who had undergone gender reassignment surgery between 1972 and 1988 inclusive and who were approximately 2 to 5 years post-surgery. Acceptance criteria for surgery included good physical health, good mental health, absence of heterosexual tendencies, willingness to undergo hormonal therapy for  $\geq 6$  months, and willingness to function in the life of the desired gender for  $\geq 6$  months. Tsoi also undertook retrospective identification of variables that could predict outcomes.

The size of the pool of available patients was not identified. Of the 81 participants, 36 (44.4%) were female-to-male and 45 (55.6%) were male-to-female (ratio 1:1.25).

The mean ages at the time of the initial visit and operation were: female-to-male  $25.4 \pm 4.4$  (range 14-36) and  $27.4 \pm 4.0$ ; (range 14-36); male-to-female  $22.9 \pm 4.6$  (range 14-36) and  $24.7 \pm 4.3$  (14-36) years respectively. Of all participants, 14.8% were under age 20 at the time of the initial visit. All were at least 20 at the time of gender reassignment surgery. The reported age of onset was 8.6 years for female-to-male patients and 8.7 years for male-to-female patients.

All participants reported dressing without difficulty in the reassigned gender; 95% of patients reported good or satisfactory adjustment in employment and income status; 72% reported good or satisfactory adjustment in relationships with partners. Although the quality of life tool was self-designed, 81% reported good or satisfactory

adjustment to their new gender, and 63% reported good or acceptable satisfaction with sexual activity. Of the female-to-male patients, 39% reported good or acceptable satisfaction with sex organ function in comparison to 91% of male-to-female patients ( $p<0.001$ ). (The author reported that a fully functioning neo-phallus could not be constructed at the time.) The age of non-intercourse sexual activity was the only predictor of an improved outcome.

*Weyers S, Elaut E, De Sutter P, Gerris J, T'Sjoen G, Heylens G, De Cuypere G, Verstraelen H. Long-term assessment of the physical, mental, and sexual health among transsexual women. J Sex Med. 2009 Mar;6(3):752-60. Epub 2008 Nov 17.*

Weyers et al. (2009) conducted a prospective, non-blinded, observational study using a cross-sectional design and several measurement instruments including a non-specific quality of life tool and a semi-specific quality of life tool (using normative data) along with two self-designed tools.

The investigators assessed general quality of life, sexual function, and body image from the prior four weeks in Dutch-speaking male-to-female patients with gender dysphoria who attended a single-center (Ghent, Belgium), specialized, comprehensive care university clinic. Investigators used the Dutch version of the SF-36 and results were compared to normative data from Dutch women and U.S. women. The 19 items of the Dutch version of the Female Sexual Function Index (FSFI) were used to measure sexual desire, function, and satisfaction. A self-designed seven question visual analog scale (VAS) was used to measure satisfaction with gender related body traits and appearance perception by self and others. A self-designed survey measured a broad variety of questions regarding personal medical history, familial medical history, relationships, importance of sex, sexual orientation, gynecologic care, level of regret, and other health concerns. For this study, hormone levels were also obtained.

The study consisted of 50 (71.5% of the eligible recruits) participants. Analysis of the data revealed that the patient's average age was  $43.1 \pm 10.4$  years, and all of the patients had vaginoplasty. This same population also had undergone additional feminization surgical procedures (breast augmentation 96.0%, facial feminization 36.0%, vocal cord surgery 40.0%, and cricoid cartilage reduction 30.0%). A total of two (4.0%) participants reported "sometimes" regretting reassignment surgery and 23 (46.0%) were not in a relationship. For the cohort, estradiol, testosterone, and sex hormone binding globulin levels were in the expected range for the reassigned gender. The SF-36 survey revealed that the subscale scores of the participants did not differ substantively from those of Dutch and U.S. women. VAS scores of body image were highest for self-image, appearance to others, breasts, and vulva/vagina (approximately 7 to 8 of 10). Scores were lowest for body hair, facial hair, and voice characteristics (approximately 6 to 7 of 10).

The total FSFI score was  $16.95 \pm 10.04$  out of a maximal 36. The FSFI scores averaged 2.8 (6 point maximum): satisfaction  $3.46 \pm 1.57$ , desire  $3.12 \pm 1.47$ , arousal  $2.95 \pm 2.17$ , lubrication  $2.39 \pm 2.29$ , orgasm  $2.82 \pm 2.29$ , and pain  $2.21 \pm 2.46$ . Though these numbers were reported in the study, data on test population controls were not provided.

A post hoc exploration of the data suggested the following: perceived improvement in general health status was greater in the subset that had undergone reassignment surgery within the last year; sexual orientation impacted the likelihood of being in a relationship; SF-36 scores for vitality, social functioning, and mental health were nominally better for those in relationships, but that overall SF-36 scores did not differ by relationship status; sexual orientation and being in a relationship impacted FSFI scores; and reported sexual function was higher in those with higher satisfaction with regards to their appearance.

*Wierckx K, Van Caenegem E, Elaut E, Dedeker D, Van de Peer F, Toye K, Weyers S, Hoebeke P, Monstrey S, De Cuypere G, T'Sjoen G. Quality of life and sexual health after sex reassignment surgery in transsexual men. J Sex Med. 2011 Dec;8(12):3379-88. Epub 2011 Jun 23.*

Wierckx et al. conducted a prospective, non-blinded, observational study using a cross-sectional design and several measurement instruments (a non-specific quality of life tool with reported normative data along with three self-designed tools). The investigators assessed general quality of life, sexual relationships, and surgical complications in Dutch-speaking female-to-male patients with gender dysphoria who attended a single-center, specialized, comprehensive care, university clinic (Ghent, Belgium). Investigators used the Dutch version of the SF-36 with 36 questions, eight subscales, and two domains evaluating physical and mental health. Results were compared to normative data from Dutch women and Dutch men. Self-designed questionnaires to evaluate aspects of medical history, sexual functioning (there were separate versions for those with and without partners), and surgical results were also used. The Likert-style format was used for many of the questions.



A total of 79 female-to-male patients with gender dysphoria had undergone reassignment surgery were recruited; ultimately, 47 (59.5%) chose to participate. Three additional patients were recruited by other patients. One of the 50 participants was later excluded for undergoing reassignment surgery within the one year window. The age of patients was:  $30 \pm 8.2$  years (range 16 to 49) at the time of reassignment surgery and  $37.1 \pm 8.2$  years (range 22 to 54) at the time of follow-up. The time since hysterectomy, oophorectomy, and mastectomy was 8 years (range 2 to 22). The patient population had undergone additional surgical procedures: metaidoioplasty (n=9; 18.4%), phalloplasty (n=8 after metaidoioplasty, 38 directly; 93.9% total), and implantation of erectile prosthetic device (n=32; 65.3%). All had started hormonal therapy at least two years prior to surgery and continued to use androgens.

The SF-36 survey was completed by 47 (95.9%) participants. The "Vitality" and the "Mental Health" scales were lower than the Dutch male population:  $62.1 \pm 20.7$  versus  $71.9 \pm 18.3$  and  $72.6 \pm 19.2$  versus  $79.3 \pm 16.4$  respectively. These subscale scores were equivalent to the mean scores of the Dutch women.

None of the participants were dissatisfied with their hysterectomy-oophorectomy procedures; 4.1% were dissatisfied with their mastectomies because of extensive scarring; and 2.2% were dissatisfied with their phalloplasties. Of the participants, 17.9% were dissatisfied with the implantation of an erectile prosthetic device; 25 (51.0%) reported at least one post-operative complication associated with phalloplasty (e.g., infection, urethrostenosis, or fistula formation); 16 (50.0% of the 32 with an erectile prosthetic device) reported at least one post-operative complication associated with implantation of an erectile prosthetic (e.g., infection, leakage, incorrect positioning, or lack of function).

A total of 18 (36.7%) participants were not in a relationship; 12.2% reported the inability to achieve orgasm with self-stimulation less than half the time; 12.2% did not respond to the question. Of those participants with partners, 28.5% reported the inability to achieve orgasm with intercourse less than half the time and 9.7% did not respond to this question. Also, 61.3% of those with partners reported (a) no sexual activities (19.4%) or (b) activities once or twice monthly (41.9%), and there were 12.9% who declined to answer.

### c. Observational, surgical patients, cross-sectional, with controls

*Ainsworth TA, Spiegel JH. Quality of life of individuals with and without facial feminization surgery or gender reassignment surgery. Qual Life Res. 2010 Sep;19(7):1019-24.*

Ainsworth and Spiegel conducted a prospective, observational study using a cross-sectional design and a partially self-designed survey tool. The blind status is unknown. Treatment types served as the basis for controls.

The investigators, head and neck surgeons who provided facial feminization services, assessed perception of appearance and quality of life in male-to-female subjects with self-reported gender dysphoria. Patients could have received no therapeutic intervention, hormone therapy, reassignment surgery, and/or facial feminization surgery and an unrestricted length of transition. (Transition refers to the time when a transgender person begins to live as the gender with which they identify rather than the gender assigned at birth.) Criteria for the various types of interventions were not available because of the survey design of the study. Patients were recruited via website or at a 2007 health conference. Pre-specified controls to eliminate duplicate responders were not provided. The investigators employed a self-designed Likert-style facial feminization outcomes evaluation questionnaire and a "San Francisco 36" health questionnaire. No citations were provided for the latter. It appears to be the Short-form (SF) 36-version 2. Changes or differences considered to be biologically significant were not pre-specified. Power corrections for multiple comparisons were not provided.

The investigators reported that there were 247 participants. (The numbers of incomplete questionnaires was not reported.) Of the 247 participants, 25 (10.1%) received only primary sex trait reassignment surgery, 28 (11.3%) received facial surgery without primary sex trait reassignment surgery, 47 (19.0%) received both facial and primary sex trait reassignment surgery, and 147 (59.5%) received neither facial nor reassignment surgery.

The mean age for each of these cohorts was: 50 years (no standard deviation [S.D.]) only reassignment surgery, 51 years (no S.D.) only facial surgery, 49 years (no S.D.) both types of surgery, and 46 years (no S.D.) (neither surgery). Of the surgical cohorts: 100% of those who had undergone primary sex trait reassignment surgery alone used hormone therapy, 86% of those who had undergone facial feminization used hormone therapy, and 98% of those who had

undergone both primary sex trait reassignment surgery and facial feminization used hormone therapy. In contrast to the surgical cohorts, 66% of the “no surgery” cohort used hormonal therapy, and a large proportion (27%) had been in transition for less than one year.

The investigators reported higher scores on the facial outcomes evaluation in those who had undergone facial feminization. Scores of the surgical cohorts for the presumptive SF-36 comprehensive mental health domain did not differ from the general U.S. female population. Scores of the “no surgery” cohort for the comprehensive mental health domain were statistically lower than those of the general U.S. female population, but within one standard deviation of the normative mean. Mean scores of all the gender dysphoric cohorts for the comprehensive physical domain were statistically higher than those of the general female U.S. population, but were well within one standard deviation of the normative mean. Analyses of inter-cohort differences for the SF-36 results were not conducted. Although the investigators commented on the potential disproportionate impact of hormone therapy on outcomes and differences in the time in “transition”, they did not conduct any statistical analyses to correct for putative confounding variables.

*Kraemer B, Delsignore A, Schnyder U, Hepp U. Body image and transsexualism. Psychopathology. 2008;41(2):96-100. Epub 2007 Nov 23.*

Kraemer et al. conducted a single center (Zurich, Switzerland) prospective, non-blinded, observational study using a cross-sectional design comparing pre-and post- surgical cohorts. Patients were required to meet DSM III or DSM IV criteria as applicable to the time of entry into the clinic. Post-surgical patients were from a long-term study group (Hepp et al., 2002). Pre-surgical patients were recent consecutive referrals. The assessment tool was the Fragebogen zur Beurteilung des eigenen Körpers (FBek) which contained three domains.

There were 23 pre-operative patients: 7 (30.4%) female-to-male and 16 (69.6%) male-to-female (ratio 1:2.3). There were 22 post-operative patients: 8 (36.4 %) female-to-male and 14 (63.6%) male-to-female (ratio 1:1.8). The mean ages of the cohorts were as follows: pre-operative 33.0±11.3 years; post-operative 38.2±9.0 years. The mean duration after reassignment surgery was 51±25 months (range 5-96).

The pre-operative groups had statistically higher insecurity scores compared to normative data for the natal sex: female-to-male 9.0±3.8 versus 5.1±3.7; male-to-female 8.1±4.5 versus 4.7±3.1 as well as statistically lower self-confidence in one's attractiveness: female-to-male 3.1±2.9 versus 8.9±3.1; male-to-female 7.0±2.9 vs 9.5±2.6.

*Mate-Kole C, Freschi M, Robin A. Aspects of psychiatric symptoms at different stages in the treatment of transsexualism. Br J Psychiatry. 1988 Apr;152: 550-3.*

Mate-Kole et al. conducted a single site (London, United Kingdom) prospective non-blinded, observational study using a cross-sectional design and two psychological tests (one with some normative data). Concurrent controls were used in this study design. The investigators assessed neuroticism and sex role in natal males with gender dysphoria. Patients at various stages of management, (i.e., under evaluation, using cross-sex hormones, or post reassignment surgery [6 months to 2 years]) were matched by age of cross-dressing onset, childhood neuroticism, personal psychiatric history, and family psychiatric history. Both a psychologist and psychiatrist conducted assessments. The instruments used were the Crown Crisp Experiential Index (CCEI) for psychoneurotic symptoms and the Bem Sex Role Inventory. ANOVA was used to identify differences between the three treatment cohorts.

For each cohort, investigators recruited 50 male-to-female patients from Charing Cross Hospital. The mean ages of the three cohorts were as follows: 34 years for patients undergoing evaluation; 35 years for wait-listed patients; and 37 years for post-operative patients. For the cohorts, 22% of those under evaluation, 24% of those on hormone treatment only, and 30% of those post-surgery had prior psychiatric histories, and 24%, 24%, while 14% in each cohort, respectively, had a history of attempted suicide. More than 30% of patients in each cohort had a first degree relative with a history of psychiatric disease.

The scores for the individual CCEI domains for depression and somatic anxiety were statistically higher (worse) for patients under evaluation than those on hormone treatment alone. The scores for all of the individual CCEI domains (free floating anxiety, phobic anxiety, somatic anxiety, depression, hysteria, and obsessiveness) were statistically lower in the post-operative cohort than in the other two cohorts.

The Bem Sex Role Inventory masculinity score for the combined cohorts was lower than for North American norms for either men or women. The Bem Sex Role Inventory femininity score for the combined cohorts was higher than for North American norms for either men or women. Those who were undergoing evaluation had the most divergent scores from North American norms and from the other treatment cohorts. Absolute differences were small. All scores of gender dysphoric patients averaged between 3.95 and 5.33 on a 7 point scale while the normative scores averaged between 4.59 and 5.12.

*Wolfradt U, Neumann K. Depersonalization, self-esteem and body image in male-to-female transsexuals compared to male and female controls. Arch Sex Behav. 2001 Jun;30(3):301-10.*

Wolfradt and Neumann conducted a controlled, prospective, non-blinded, observational study using a cross-sectional design. The investigators assessed aspects of personality in male-to-female patients who had undergone vocal cord surgery for voice feminization and in healthy non-transgender volunteers from the region. The patients had undergone gender reassignment surgery 1 to 5 years prior to voice surgery. The volunteers were matched by age and occupation.

The primary hypothesis was that depersonalization, with the sense of being detached from one's body or mental processes, would be more common in male-to-female patients with gender dysphoria. German versions of the Scale for Depersonalization Experiences (SDPE), the Body Image Questionnaire (BIQ), a Gender Identity Trait Scale (GIS), and the Self-Esteem Scale (SES) were used in addition to a question regarding global satisfaction. Three of the assessments used a 5 point scale (BIQ, GIS, and SDPE) for questions. One used a 4 point scale (SES). Another used a 7 point scale (global satisfaction). The study consisted of 30 male-to-female patients, 30 healthy female volunteers, and 30 healthy male volunteers. The mean age of study participants was 43 years (range 29- 67).

Results of the study revealed that there were no differences between the three groups for the mean scores of measures assessing depersonalization, global satisfaction, the integration of masculine traits, and body-image-rejected (subset). Also, the sense of femininity was equivalent for male-to-female patients and female controls and higher than that in male controls. The levels of self-esteem and body image-dynamic (subset) were equivalent for male-to-female patients and male controls and higher than that in female controls, and none of the numeric differences between means exceeded 0.61 units.

*Kuhn A, Bodmer C, Stadlmayr W, Kuhn P, Mueller M, Birkhäuser M. Quality of life 15 years after sex reassignment surgery for transsexualism. Fertil Steril. 2009 Nov;92(5):1685-1689.e3. Epub 2008 Nov 6.*

Kuhn et al. conducted a prospective, non-blinded, observational study using a cross-sectional design and semi-matched control cohort. The investigators assessed global satisfaction in patients who were from gynecology and endocrinology clinic (Bern, Switzerland), and who had undergone some aspect of gender reassignment surgery in the distant past, but were still receiving cross-sex hormones from the clinic. The quality of life assessment tools included a VAS and the King's Health Questionnaire (KHQ), which consists of eight domains with scores between zero and five or one and five, with lower scores indicating higher preference. The KHQ and the numerical change/difference required for clinical significance ( $\geq 5$  points in a given domain, with higher scores being more pathologic) were included in the publication. Twenty healthy female controls from the medical staff who had previously undergone an abdominal or pelvic surgery were partially matched by age and body mass index (BMI), but not sex. No corroborative gynecologic or urologic evaluations were undertaken.

Of the 55 participants, three (5.4%) were female-to-male and 52 (94.5%) were male-to-female (ratio 1:17.3). Reassignment surgery had been conducted 8 to 23 years earlier (median 15 years). The median age of the patients at the time of this study was 51 years (range 39-62 years). The patients had undergone a median of nine surgical procedures in comparison to the two undergone by controls. Reassignment patients were less likely to be married (23.6% versus 65%;  $p=0.002$ ); partnership status was unknown in five patients. The scores of VAS global satisfaction (maximal score eight) were lower for surgically reassigned patients ( $4.49 \pm 0.1$  SEM) than controls ( $7.35 \pm 0.26$  SEM) ( $p<0.0001$ ).

The abstract stated that quality of life was lower in reassignment patients 15 years after surgery relative to controls. One table in the study, Table 2, delineated statistically and biologically significant differences for four of the eight KHQ domains between the patients and controls: physical limitation:  $37.6 \pm 2.3$  versus  $20.9 \pm 1.9$  ( $p<0.0001$ ), personal limitation:

20.9±1.9 versus 11.6±0.4 ( $p<0.001$ ), role limitation: 27.8±2.4 versus 34.6±1.7 ( $p=0.046$ ), and general health: 31.7±2.2 versus 41.0±2.3 ( $p<0.02$ ). There is a related paper by Kuhn et al. 2006.

*Haraldsen IR, Dahl AA. Symptom profiles of gender dysphoric patients of transsexual type compared to patients with personality disorders and healthy adults. Acta Psychiatr Scand. 2000 Oct;102(4):276-81.*

Haraldsen and Dahl conducted a single-center (Oslo, Norway) partially prospective, non-blinded, observational study using a cross-sectional design and a non-specific psychometric test. There was a control group, but it was not concurrent.

In the germane sub-study, the investigator assessed psychopathology in patients with gender dysphoria. Patients, who were independently evaluated by two senior psychiatrists, were required to meet DSM III-R or DSM IV diagnostic criteria and the Swedish criteria for reassignment surgery. The Norwegian version of the SCL-90 was used. The testing was conducted from 1987 to 1989 for those who had undergone reassignment surgery between 1963 and 1987 and from 1996 to 1998 for pre- surgical patients who had applied for reassignment surgery between 1996 and 1998. In addition, Axis I, Axis II, and Axis V (Global Functioning) was assessed.

Of 65 post-surgical and 34 pre-surgical patients, 59 post-surgical and 27 pre-surgical patients ultimately entered the study. The combined cohorts consisted of 35 (40.7%) female-to-male patients and 51 (59.3%) male-to-female patients (ratio 1:1.5). The ages were female-to-male 34±9.5 years and female-to-male 33.3±10.0 years. The other control group consisted of patients with personality disorder. Of these, 101 (27 men (33.9±7.3 years) and 74 women (31.6±8.2) were tested during a treatment program. One year later, 98% were evaluated. A total of 28 (32.5%) of the pre- and post-reassignment surgery patients had an Axis I diagnosis compared to 100 (99.0%) of those with personality disorders. Depression and anxiety were the most common diagnoses in both groups, but were approximately three to four times more common in the personality disorder cohort. Seventeen (19.8%) of the pre- and post-reassignment surgery patients had an Axis II diagnosis whereas the mean number of personality disorders in the personality disorder cohort was 1.7±1. The Global Assessment of Function was higher (better) in the gender dysphoric groups (78.0±8.9) than in the personality disorder cohort (53.0±9.0).

Global Severity Indices (GSI) were highest for those with personality disorder regardless of gender and exceeded the cut-point score of 1.0. The GSI scores for females-to-males and males-to-females were 0.67±.57 and 0.56±0.45. Although they were nominally higher than the healthy normative controls (males: 0.32±0.36 and females 0.41±0.43), they were well within the non- pathologic range. The same was true for the subscales.

SCL-90 GSI scores did not differ substantively between pre- and post-surgical patients, nor did the SCI subscale scores differ substantively between pre- and post-surgical patients. Any small non-significant differences tracked with the age and sex differences.

*Beatrice J. A psychological comparison of heterosexuals, transvestites, preoperative transsexuals, and postoperative transsexuals. J Nerv Ment Dis. 1985 Jun;173(6):358-65. (United States study)*

Beatrice conducted a prospective, non-blinded, observational study using a cross-sectional design and control cohorts in the U.S. The investigator assessed psychological adjustment and functioning (self-acceptance) in male-to-female patients with gender dysphoria (with and without GRS), transvestites from two university specialty clinics, and self-identified heterosexual males recruited from the same two universities. The criteria to qualify for the study included being known to the clinic for at least one year, cross-dressing for at least one year without arrest, attendance at 10 or more therapy sessions, emotionally self-supporting, and financially capable of payment for reassignment surgery, and all of these criteria were met by the pre-operative cohort as well as the post-operative cohort. The cohorts were matched to the post-operative cohort (age, educational level, income, ethnicity, and prior heterosexual object choice). The post-operative cohort was selected not on the basis of population representation, but on the basis of demographic feasibility for a small study. The instruments used were the Minnesota Multiphasic Personality Inventory (MMPI) and the Tennessee Self-Concept Scale (TSCS). Changes or differences considered to be biologically significant were not pre-specified.

Of the initial 54 recruits, ten subjects were left in each of the cohorts because of exclusions identified due to demographic factors. The mean age of each cohort were as follows: pre-operative gender dysphoric patients 32.5 (range 27-42) years, postoperative patients 35.1 (30-43) years old, transvestite 32.5 (29-37) years old, and heterosexual male 32.9

(28-38) years old. All were Caucasian. The mean age for cross-dressing in pre-operative patients (6.4 years) and post-operative patients (5.8 years) was significantly lower than for transvestites (11.8 years).

The scores for self-acceptance did not differ by diagnostic category or surgical status as measured by the TSCS instrument. As measured by the T-scored MMPI instrument ( $50 \pm 10$ ), levels of paranoia and schizophrenia were higher for post-operative (GRS) patients (63.0 and 68.8) than transvestites (55.6 and 59.6) and heterosexual males (56.2 and 51.6). Levels of schizophrenia were higher for pre-operative patients (65.1) than heterosexual males (51.6). There were no differences between patients with gender dysphoria. Scores for the Masculine-Feminine domain were equivalent in those with transvestitism and gender dysphoria with or without surgery, but higher than in heterosexual males. The analysis revealed that despite the high level of socio-economic functioning in these highly selected subjects, the MMPI profiles based on the categories with the highest scores were notable for antisocial personality, emotionally unstable personality, and possible manic psychosis in the pre-operative GRS patients and for paranoid personality, paranoid schizophrenia, and schizoid personality in the post-operative GRS patients. By contrast, the same MMPI profiling in heterosexual males and transvestites was notable for the absence of psychological dysfunction.

#### **d. Observational, surgical patients, longitudinal, with controls**

Dhejne C, Lichtenstein P, Boman M, Johansson A, Långström N, Landén M. Long-term follow-up of transsexual persons undergoing sex reassignment surgery: cohort study in Sweden. *PLoS One*. 2011;6(2):e16885. Epub 2011 Feb 22.

Dhejne et al. conducted a retrospective, non-blinded, observational study of nation-wide mortality using a longitudinal and a population-based matched cohort. The investigators assessed conditions such as, but not limited to, mortality, suicide attempts, psychiatric hospitalization, and substance abuse in gender-reassigned persons and randomly selected unexposed controls matched by birth year and natal sex (1:10) as well as by birth year and the reassigned gender (1:10). Data were extracted from national databases including the Total Population Register (Statistics Sweden), the Medical Birth Register, the Cause of Death Register (Statistics Sweden), the Hospital Discharge Register (National Board of Health and Welfare), the Crime Register (National Council of Crime), and those from the Register of Education for highest educational level. The criteria required to obtain the initial certificate for reassignment surgery and change in legal status from the National Board of Health and Welfare were the 2002 WPATH criteria and included evaluation and treatment by one of six specialized teams, name change, a new national identity number indicative of gender, continued use of hormones, and sterilization/castration. Descriptive statistics with hazard ratios were provided.

Investigators identified 804 patients with gender identity disorder (or some other disorder) in Sweden during the period from 1973 to 2003 inclusive. Of these patients, 324 (40.3%) underwent gender-reassignment surgery (133 female-to-male [41.0%]; 191 male-to-female [59.0%]; ratio 1:1.4). The average follow-up time for all-cause mortality was 11.4 years (median 9.1). The average follow-up time for psychiatric hospitalization was 10.4 years (median 8.1).

The mean ages in female-to-male and male-to-female reassigned patients were:  $33.3 \pm 8.7$  (range 20–62) and  $36.3 \pm 10.1$  (range 21–69) years, respectively. Immigrant status was two times higher in reassigned patients ( $n=70$ , 21.6%) than in either type of control (birth [natal] sex matched  $n=294$  [9.1%] or reassigned gender matched  $n=264$  [8.1%]). Educational attainment (10 or more years) was somewhat lower for reassigned patients ( $n=151$  [57.8%]) than in either type of control (birth sex matched  $n=1,725$  [61.5%] or reassigned gender matched  $n=1804$  [64.3%]) (cohort data were incomplete). The biggest discordance in educational attainment was for female-to-male reassigned patients regardless of the control used. Prior psychiatric morbidity (which did not include hospitalization for gender dysphoria) was more than four times higher in reassigned patients ( $n=58$ , 17.9%) than in either type of control (birth sex matched  $n=123$  [3.8%] or reassigned gender matched  $n=114$  [3.5%]).

All-cause mortality was higher for patients who underwent gender reassignment surgery ( $n=27$  [8.3%]) than in controls (hazard ratio 2.8 [CI 1.8-4.3]) even after adjustment for covariants (prior psychiatric morbidity and immigration status). Divergence in the survival curves began at 10 years. Survival rates at 20 year follow-up (as derived from figure 1) were: female control 97%, male controls 94%, female-to-male patients 88%, and male-to-female patients 82%. The major contributor to this mortality difference was completed suicide ( $n=10$  [3.1%]; adjusted hazard ratio 19.1 [CI 5.8-62.9]). Mortality due to cardiovascular disease was modestly higher for reassigned patients ( $n=9$  [2.8%]) than in controls (hazard ratio 2.5 [CI 1.2-5.3]).



Suicide attempts were more common in patients who underwent gender reassignment surgery ( $n = 29$  [9.0%]) than in controls (adjusted hazard ratio 4.9 [CI 2.9–8.5]). Male-to-female patients were at higher adjusted risk for attempted suicide than either control whereas female-to-male patients were at higher adjusted risk compared to only male controls and maintained the female pattern of higher attempted suicide risk. Hospitalizations for psychiatric conditions (not related to gender dysphoria) were more common in reassigned persons  $n = 64$  [20.0%] than in controls (hazard ratio 2.8 [CI 2.0–3.9]) even after adjusting for prior psychiatric morbidity. Hospitalization for substance abuse was not greater than either type of control.

The nationwide mortality studies by Dhejne et al. (2011) includes much, if not all, of the Landén (1998) patient population and much of the Dhejne et al. (2014) population.

*Dhejne C, Öberg K, Arver S, Landén M. An analysis of all applications for sex reassignment surgery in Sweden, 1960-2010: prevalence, incidence, and regrets. Arch Sex Behav. 2014 Nov;43(8):1535-45. Epub 2014 May 29 and Landén M, Wålinder J, Lambert G, Lundström B. Factors predictive of regret in sex reassignment. Acta Psychiatr Scand. 1998 Apr;97(4):284 (Dhejne et al., 2014; Landén et al., 1998) Sweden-All*

Dhejne et al. conducted a non-blinded, observational study that was longitudinal for the capture of patients with “regret” in a national database. This same group (Landén et al., 1998) conducted a similar study along with retrospective acquisition of clinical data to explore the differences between the cohorts with and without regret. There were no external controls; only intra- group comparisons for this surgical series.

The investigators assessed the frequency of regret for gender reassignment surgery. Data were extracted from registries at the National Board of Health and Welfare to which patients seeking reassignment surgery or reversal of reassignment surgery make a formal application and which has maintained such records since a 1972 law regulating surgical and legal sex reassignment. The investigators reviewed application files from 1960 through 2010. The specific criteria to qualify for gender surgery were not delineated. Patients typically underwent diagnostic evaluation for at least one year. Diagnostic evaluation was typically followed by the initiation of gender confirmation treatment including hormonal therapy and real-life experience. After two years of evaluation and treatment, patients could make applications to the national board. Until recently sterilization or castration were the required minimal surgical procedures (Dhejne et al., 2011). Secular changes in this program included consolidation of care to limited sites, changes in accepted diagnostic criteria, and provision of non-genital surgery, e.g., mastectomy during the real- life experience phase, and family support.

There were 767 applicants for legal and surgical reassignment (289 [37.7%] female-to-male and 478 [62.3%] male-to-female; ratio 1:1.6). The number of applicants doubled each ten year interval starting in 1981.

Of the applicants, 88.8% or 681 (252 [37.0%] female-to-male and 429 [63.0%] male-to-female; ratio 1:1.7) had undergone surgery and changed legal status by June 30, 2011. This number included eight (four [50.0%] female-to-male and four [50.0%] male to female; ratio 1:1) people who underwent surgery prior to the 1972 law. This number appears to include 41 (two [4.9%] female-to-male and 39 [95.1%] male-to-female; ratio 1:19.5) people who underwent surgery abroad at their own expense (usually in Thailand or the U.S.). This cohort (6% of 681) includes one person who was denied reassignment surgery by Sweden.

Twenty-five (3.3%) of the applications were denied with the two most common reasons being an incomplete application or not meeting the diagnostic criteria. An additional 61 (8.0%) withdrew their application, were wait-listed for surgery, postponed surgery (perhaps in hopes of the later revocation of the sterilization requirement), or were granted partial treatment.

The formal application for reversal of the legal gender status, the “regret rate”, was 2.2%. No one who underwent sex-reassignment surgery outside of Sweden (36 of these 41 had surgery after 1991) has requested reversal. The authors noted, however, that this preliminary number may be low because the median time interval to reversal request was eight years-only three of which had elapsed by publication submission- and because it was the largest serial cohort. This number did not include other possible expressions of regret including suicide (Dhejne et al., 2011).

Dhejne et al. in 2014 reported that the female-to-male (n=5): male-to-female (n=10) ratio among those who made formal applications for reversal was 1:2. The investigators also reported that the female-to-male applicants for reversal were younger at the time of initial surgical application (median age 22 years) than the complete female-to-male cohort at the time of surgical application (median age 27 years). By contrast the male-to-female applicants for reversal were older at the time of initial surgical application (median age 35 years) than the complete male-to-female cohort at the time of initial surgical application (median age 32 years). Other clinical data to explore the differences between the cohorts with and without regret were not presented in this update publication.

In their earlier publication, in addition to determining a regret rate (3.8%), Landén et al. extracted data from medical records and government verdicts. Pearson Chi-square testing with Yates' correction for small sample sizes was used to identify candidate variables predictive of regret. They observed that: (a) 25.0% of the cohort with regrets and 11.4% of the cohort without regrets were unemployed, (b) 16.7% of the cohort with regrets and 15.4% of the cohort without regrets were on "sick benefit", (c) 15.4% of the cohort with regrets and 13.9% of the cohort without regrets had problems with substance abuse, (d) 69.2% of the cohort with regrets and 34.6% of the cohort without regrets had undergone psychiatric treatment, (e) 15.4% of the cohort with regrets and 8.8% of the cohort without regrets had a mood disorder, and (f) 15.4% of the cohort with regrets and 1.5% of the cohort without regrets had a psychotic disorder.

The putative prognostic factors that were statistically different between the cohorts with and without regret included prior psychiatric treatment, a history of psychotic disorder, atypical features of gender identity, and poor family support. Factors that trended towards statistical difference included having an unstable personality, sexual orientation and transvestitism. Univariate regression analyses further clarified the most important variables. These variables were tested with logistic regression. Initial modeling included the variable "history of psychotic disorder". Although this variable was predictive, it was excluded from future analyses because it was already a contraindication to reassignment surgery. Additional multivariate regression analyses identified poor family support as the most predictive variable and atypical features of gender identity as the second most important variable. Presence of both variables had a more than additive effect.

The nationwide mortality studies by Dhejne et al. (2011) includes much, if not all, of the Landén (1998) patient population and most of the Dhejne (2014) population. There is a related paper by Landén et al. 1998b that included the criteria to qualify for surgical intervention at that time.

*Heylens G, Verroken C, De Cock S, T'Sjoen G, De Cuypere G. Effects of different steps in gender reassignment therapy on psychopathology: a prospective study of persons with a gender identity disorder. J Sex Med. 2014 Jan;11(1):119-26. Epub 2013 Oct 28.*

Heylens et al. conducted a prospective, non-blinded observational study using a longitudinal design in which patients served as their own controls. They used a non-specific psychiatric test with normative data along with two self-designed questionnaires. The investigators assessed psychosocial adjustment and psychopathology in patients with gender identity disorders. Patients were to be sequentially evaluated prior to institution of hormonal therapy, then 3 to 6 months after the start of cross-sex hormone treatment, and then again one to 12 months after reassignment surgery. The Dutch version of the SCL-90R with eight subscales (agoraphobia, anxiety, depression, hostility, interpersonal sensitivity, paranoid ideation/psychoticism, and sleeping problems) and a global score (psycho-neuroticism) was used serially. A seven parameter questionnaire was used serially to assess changes in social function. Another cross-sectional survey assessed emotional state. The cohorts at each time point consisted of patients who were in the treatment cohort at the time and who had submitted survey responses.

Ninety of the patients who applied for reassignment surgery between June 2005 and March 2009 were recruited. Fifty seven entered the study. Forty-six (51.1% of the recruited population) underwent reassignment surgery. Baseline questionnaire information was missing for 3 patients. Baseline SCL-90 scores were missing for 1 patient but included SCL-90 scores from some of the 11 recruits who had not yet undergone reassignment surgery. Time point 2 (after hormone therapy) SCL-90 information was missing for 10, but included SCL-90 scores from some of the 11 recruits who had not yet undergone reassignment surgery. At time point 3, 42 (91.3% of those who underwent reassignment surgery) patients completed some part of the SCL-90 survey and the psychosocial questionnaires. Some questionnaires were incomplete. The investigators reported response rates of 73.7% for the psychosocial questionnaires and 82.5% for the SCL-90.

Of those who responded at follow-up after surgery, 88.1% reported having good friends; 52.4% reported the absence of a relationship; 47.6% had no sexual contacts; 42.9% lived alone; 40.5% were unemployed, retired, students, or otherwise not working; 2.4% reported alcohol abuse; and 9.3% had attempted suicide. The frequency of these parameters reportedly did not change statistically during the study interval, but there was no adjustment for the inclusion of patients who did not undergo surgery.

In a cross-sectional, self-report mood survey, of the 42 study entrants who completed the entire treatment regimen including reassignment surgery and the final assessment (refers to the initial 57) reported improved body-related experience (97.6%), happiness (92.9%), mood (95.2%), and self-confidence (78.6%) and reduced anxiety (81.0%). Of participants, 16.7% reported thoughts of suicide. Patients also reported on the intervention phase that they believed was most helpful: hormone initiation (57.9%), reassignment surgery (31.6%), and diagnostic-psychotherapy phase (10.5%).

The global "psycho-neuroticism" SCL-90R score, along with scores of 7 of the 8 subscales, at baseline were statistically more pathologic than the general population. After hormone therapy, the score for global "psycho-neuroticism" normalized and remained normal after reassignment surgery. More specifically the range for the global score is 90 to 450 with higher scores being more pathologic. The score for the general population was  $118.3 \pm 32.4$ . The respective scores for the various gender dysphoric cohorts were  $157.7 \pm 49.8$  at initial presentation,  $119.7 \pm 32.1$  after hormone therapy, and  $127.9 \pm 37.2$  after surgery. The scores for the general population and the scores after either hormone treatment or surgical treatment did not differ.

*Kockott G, Fahrner EM. Transsexuals who have not undergone surgery: a follow-up study. Arch Sex Behav. 1987 Dec;16(6):511-22.*

Kockott and Fahrner conducted a single center (Munich, Germany) prospective, observational study using a longitudinal design. Treatment cohorts were used as controls, and patients served as their own controls. The investigators assessed psychosocial adjustment in patients with gender identity issues. Patients were to have met DSM III criteria. Trans-sexuality, transvestitism, and homosexuality were differentiated. The criteria required for patients to receive hormone therapy and/or reassignment surgery were not delineated. After receiving hormone therapy, patients were later classified by surgical reassignment status (pre-operative and post-operative) and desire for surgery (unchanged desire, hesitant, and no longer desired).

The first investigative tool was a semi-structured in-person interview consisting of 125 questions. The second investigative tool was a scale that organized the clinical material into nine domains which were then scored on a scale. The Psychological Integration of Trans-sexuals (PIT) instrument developed according to the scale used by Hunt and Hampson (1980) for assessment of 17 post-operative patients. There were 15 interviews and two separate interviewers. There were 80 patients identified, but 58 (72.5%) patients (26 pre-operative; 32 post-operative) were ultimately included in the analysis. The duration of follow-up was longer for post-operative patients (6.5 years) than for pre-operative patients (4.6 years) (including time for one patient subsequently excluded). The mean age of the post-operative patients was  $35.5 \pm 13.1$  years, and the age of the patients who maintained a continued desire for surgery was  $31.7 \pm 10.2$  years. The age of the patients who hesitated about surgery was somewhat older,  $40.3 \pm 9.4$  years. The age of the patients who were no longer interested in surgery was  $31.8 \pm 6.5$  years. All were employed or in school at baseline. Patients with hesitation were financially better-off, had longer-standing relationships even if unhappy, and had a statistical tendency to place less value on sex than those with an unchanged wish for surgery.

Post-operative patients more frequently reported contentment with the desired gender and the success of adaption to the gender role than the pre-operative patients with a persistent desire for surgery. Post-operative patients more frequently reported sexual satisfaction than pre-operative patients with a continuing desire for surgery. Post-operative patients also more frequently reported financial sufficiency and employment than pre-operative patients with a persistent desire for surgery. Suicide attempts were stated to be statistically less frequent in the post-surgical cohort.

Psychosocial adjustment scores were in the low end of the range with "distinct difficulties" (19-27) at the initial evaluation for the post-operative patients (19.7), the pre-operative patients with a persistent wish for surgery (20.2), and the hesitant patients (19.7). At initial evaluation, psychosocial adjustment scores for patients no longer wanting surgery were at the high end of the range with "few difficulties" (10-18). At the final evaluation, Psychosocial adjustment scores were at the high end of the range "few difficulties" (10-18) for the post-operative patients (13.2) and the patients no



longer wanting surgery (16.5). Psychosocial adjustment scores at the final evaluation were in the borderline range between “few difficulties” (10-18) and “distinct difficulties” (19-27) for both the pre-operative patients with a persistent desire for surgery (18.7), and the hesitant patients (19.1).

The changes in the initial score and the final follow-up score within each group were tracked and reported to be statistically significant for the post-operative group, but not for the other groups. Statistical differences between groups were not presented. Moreover, the post-operative patients had an additional test immediately prior to surgery. The first baseline score (19.7) would have characterized the patients as having “distinct difficulties” in psychosocial adjustment while the second baseline score (16.7) would have categorized the patients as having “few difficulties” in psychosocial adjustment despite the absence of any intervention except the prospect of having imminent reassignment surgery. No statistics reporting on the change between scores of the initial test and the test immediately prior to surgery and the change between scores of the test immediately prior to surgery and the final follow-up were provided.

*Meyer JK, Reter DJ. Sex reassignment. Follow-up. Arch Gen Psychiatry. 1979 Aug;36(9):1010-5. (United States study)*

Meyer and Reter conducted a single-center (Baltimore, Maryland, U.S.) prospective, non-blinded, observational study using a longitudinal design and retrospective baseline data. Interview data were scored with a self-designed tool. There were treatment control cohorts, and patients served as their own controls. The investigators assessed patients with gender dysphoria. The 1971 criteria for surgery required documented cross-sex hormone use as well as living and working in the desired gender for at least one year in patients subsequently applying for surgery. Clinical data including initial interviews were used for baseline data. In follow-up, the investigators used extensive two to four hour interviews to collect information on (a) objective criteria of adaptation, (b) familial relationships and coping with life milestones, and (c) sexual activities and fantasies. The objective criteria, which were the subject of the publication, included employment status (Hollingshead job level), cohabitation patterns, and need for psychiatric intervention. The investigators designed a scoring mechanism for these criteria and used it to determine a global adjustment score. The score value or the change score that was considered to be biologically significant was not pre-specified in the methods.

The clinic opened with 100 patients, but when the follow-up was completed, 52 patients were interviewed and 50 gave consent for publication. Of these, 15 (four female-to-male, 11 male-to-female; ratio 1:2.8) were part of the initial operative cohort, 14 (one female-to-male; 13 male-to-female; ratio 1:13) later underwent reassignment surgery at the institution or elsewhere, and 21 (five female-to-male; 16 male-to-female; ratio 1:3.2) did not undergo surgery. The mean ages of these cohorts were 30.1, 30.9, and 26.7 years respectively. The mean follow-up time was 62 months (range 19-142) for those who underwent surgery and 25 months (range 15-48) for those who did not. Socioeconomic status was lowest in those who subsequently underwent reassignment surgery.

Of patients initially receiving surgery, 33% had some type of psychiatric contact prior to the initial clinic evaluation and 8% had psychiatric contact during the follow-up. Of the patients who had not undergone surgery or who had done so later, 72% had some type of psychiatric contact prior to the initial clinic evaluation and 28% had psychiatric contact during follow-up. There was a single female-to-male patient with multiple surgical complications who sought partial reassignment surgery reversal.

The adjustment scores improved over time with borderline statistical significance for the initial operative group and with statistical significance for the never operated group. The absolute score value at follow-up was the same for both groups (1.07+1.53 and 1.10+1.97 respectively). By contrast, the adjustment scores did not improve for those who were not in the cohort initially approved for surgery, but who subsequently underwent surgery later. This was particularly true if the surgery was performed elsewhere. The absolute score value at follow-up was 0.21+1.89.

Related papers include Meyer et al. (1971), Meyer et al. (1974a-d), and Derogatis et al. (1978) along with commentary response by Fleming et al. (1980).

*Rakic Z, Starcevic V, Maric J, Kelin K. The outcome of sex reassignment surgery in Belgrade: 32 patients of both sexes. Arch Sex Behav. 1996 Oct;25(5):515-25.*

Rakic et al. single-center (Belgrade, Yugoslavia) conducted a prospective, non-blinded, observational study using a cross-sectional design and an investigator- designed quality of life tool that asked longitudinal (pre- and post-treatment) questions. Patients served as their own controls. The authors state that the study was not designed to assess the

predictors of poor outcomes.

The investigators assessed global satisfaction, body image, relationships, employment status, and sexual function in patients with gender dysphoria who underwent reassignment surgery between 1989 and 1993 and were at least six months post-operative. The criteria to qualify for gender surgery were delineated (1985 standards from the Harry Benjamin International Gender Dysphoria Association) and included cross-gender behavior for at least one year and sexual orientation to non-natal sex. The questionnaire consisted of 10 questions using yes/no answers or Likert-type scales. Findings were descriptive without statistical analysis. As such, changes or differences considered to be biologically significant were not pre-specified, and there were no adjustments for multiple comparisons.

Of the 38 patients who had undergone reassignment surgery, 34 were eligible for the study and 32 participated in the study (two were lost to follow-up and four were in the peri-operative period) - 10 (31.2%) female-to-male and 22 (68.8%) male-to-female (ratio 1:2.2). The duration of follow-up was  $21.8 \pm 13.4$  months (range 6 months to 4 years). The age was female-to-male  $27.8 \pm 5.2$  (range 23-37) and male-to-female  $26.4 \pm 7.8$  (range 19-47).

Using an investigator-designed quality of life tool, all patients reported satisfaction with having undergone the surgery. Of the total participants, four (12.5%) (all male-to-female) and eight (25%) (87.5% male-to-female) reported complete dissatisfaction or partial satisfaction with their appearance. Regarding relationships, 80% of female-to-male and 100% of male-to-female patients were dissatisfied with their relationships with others prior to surgery; whereas, no female-to-male patients and 18.1% of male-to-female patients were dissatisfied with relationships after surgery. Regarding sexual partners, 60% of female-to-male and 72.7% of male-to-female patients reported not having a sexual partner prior to surgery; whereas, 20% of female-to-male patients and 27.3% of male-to-female patients did not have a sexual partner after surgery. Of those with partners at each time interval, 100% of female-to-male and 50% of male-to-female patients reported not experiencing orgasm prior to surgery; whereas, 75% of female-to-male and 37.5% of male-to-female patients reported not experiencing orgasm after surgery.

*Ruppin U, Pfäfflin F. Long-term follow-up of adults with gender identity disorder. Arch Sex Behav. 2015 Jul;44(5):1321-9. Epub 2015 Feb 18.*

Ruppin and Pfäfflin conducted a single-center (Ulm, Germany) partially prospective, non-blinded, observational study using a longitudinal design and non-specific psychometric tests and a self-designed interview tool and questionnaire. Patients served as their own controls.

The investigators assessed psychological symptoms, interpersonal difficulties, gender role stereotypes, personality characteristics, societal function, sexual function, and satisfaction with new gender role in patients with gender dysphoria. Patients were required to have met the ICD-10 criteria for trans-sexualism, been seen by the clinic by prior to 2001, and completed an official change in gender including name change prior to 2001. Assessment tools included German versions of standardized surveys with normative data: the SCL 90R, the Inventory of Interpersonal Problems (IIP), Bem Sex Role Inventory (BSRI), and the Freiburg Personality Inventory (FPI-R), along with semi-structured interviews with self-designed questionnaires. The prospective survey results were compared to retrospective survey results. Changes or inter-group differences considered to be biologically significant were not pre-specified. Diagnostic cut points were not provided. Statistical corrections for multiple comparisons were not included.

Overall, 140 patients received recruitment letters and then 71 (50.7%) agreed to participate. Of these participants, 36 (50.7%) were female-to-male; 35 (49.3%) were male-to-female (ratio 1:0.97). The ages of the patients were:  $41.2 \pm 5.78$  years (female-to-male) and  $52.9 \pm 10.82$  years (male-to-female). The intervals for follow-up were  $14.1 \pm 1.97$  years and  $13.7 \pm 2.17$  years, respectively.

All female-to-male patients had undergone mastectomy; 91.7% had undergone oophorectomy and/or hysterectomy; 61.1% had undergone radial forearm flap phalloplasty or metaoidioplasty. Of male-to-female patients, 94.3% had undergone vaginoplasty and perhaps an additional procedure (breast augmentation, larynx surgery, or vocal cord surgery). Two male-to-female patients had not undergone any reassignment surgery, but were still included in the analyses.

A total of 68 patients ranked their well-being as  $4.35 \pm 0.86$  out of five (three patients did not respond to this question). Of respondents, 40% reported not being in a steady relationship. Regular sexual relationships were reported by 57.1% of 35 female-to-male respondents and 39.4% of 33 male-to-female respondents (three patients did not respond to this question). A total of 11 patients reported receiving out-patient psychotherapy; 69 did not express a desire for gender role reversal (two did not respond to this question). The response rate was less than 100% for most of the self-designed survey questions.

Changes from the initial visit to the follow-up visit were assessed for the SCL-90R in 62 of 71 patients. The effect size was statistically significant and large only for the "Interpersonal Sensitivity" scale (one of 10 parameters). The absolute magnitude of mean change was small: from  $0.70 \pm 0.67$  to  $0.26 \pm 0.34$  (scale range 0-4). The duration of follow-up did not correlate with the magnitude of change on the various scales. Differences in baseline SCL-90R scores of 62 participants were compared with the score of 63 of the 69 eligible recruits who declined to enter the study and were notable for higher "Depression" scores for the latter.

Changes from the initial visit to the follow-up visit were assessed for the IIP in 55 of 71 patients. The effect size was statistically significant and large only for the "Overly Accommodating" scale (one of eight parameters). The absolute magnitude of mean change was small: from  $11.64 \pm 5.99$  to  $7.04 \pm 4.73$  (scale range 0-32). The duration of follow-up did not correlate with the magnitude of change on the various scales.

Changes from the initial visit to the follow-up visit were assessed for the FPI-R in 58 of 71 patients. The effect size was statistically significant and large only for the "Life Satisfaction" scale (one of 12 parameters). The absolute magnitude of mean change was substantive: from  $4.43 \pm 2.99$  to  $8.31 \pm 2.63$  (scale range 0-12). The duration of follow-up did not correlate with the magnitude of change on the various scales.

Changes from the initial visit to the follow-up visit were assessed for the BSRI in 16 of 36 female to male patients and 19 of 35 male to female patients. The "Social Desirability" score increased for the female-to-male respondents. At endpoint, both categories of respondents reported androgynous self-images.

This current report is an update of prior publications by Pfafflin including work with Junge which was published in a variety of formats and initially in German.

*Smith YL, Van Goozen SH, Kuiper AJ, Cohen-Kettenis PT. Sex reassignment: outcomes and predictors of treatment for adolescent and adult transsexuals. Psychol Med. 2005 Jan;35(1):89-99.*

Smith et al. conducted a single-center (Amsterdam, Netherlands) prospective, non-blinded, observational study using a longitudinal design and psychological function tools. Patients served as their own control prior to and after reassignment surgery. The investigators assessed gender dysphoria, body dissatisfaction, physical appearance, psychopathology, personality traits, and post-operative function in patients with gender dysphoria. Patients underwent some aspect of reassignment surgery. The test instruments included the Utrecht Gender Dysphoria Scale (12 items), the Body Image Scale adapted for a Dutch population (30 items), Appraisal of Appearance Inventory (3 observers, 14 items), the Dutch Short MMPI (83 items), the Dutch version of the Symptom Checklist (SCL)(90 items), and clinic-developed or modified questionnaires. Pre-treatment data was obtained shortly after the initial interview. Post- surgery data were acquired at least one year post reassignment surgery.

Three hundred twenty five consecutive adolescents and adults were screened for the study. One-hundred three (29 [28.2%] female-to-male patients and 74 [71.8%] male-to-female patients [ratio 1:2.6]) never started hormone therapy; 222 (76 [34.2%] female-to-male patients and 146 [65.8%] male-to-female patients [ratio 1:1.9]) initiated hormone therapy. Of the patients who started hormone therapy, 34 (5 [14.7%] female-to-male patients and 29 [85.3%] male-to-female patients [ratio 1:5.8]) discontinued hormone therapy.

Subsequently, the study analysis was limited to adults. One hundred sixty-two (58 [35.8%] female-to-male and 104 [64.2%] male-to-female [ratio 1:1.8]) were eligible and provided pre-surgical test data, and 126 (77.8% of eligible adults) (49 [38.9%] female-to-male and 77 [61.1%] male-to-female [ratio 1:1.6]) provided post-surgical data. For those patients

who completed reassignment, the mean age at the time of surgical request was 30.9 years (range 17.7-68.1) and 35.2 years (range 21.3-71.9) years at the time of follow-up. The intervals between hormone treatment initiation and surgery and surgery and follow-up were 20.4 months (range 12 to 73) and 21.3 months (range 12 to 47) respectively.

Of the 126 adults who provided post-surgical data, 50 (40.0%) reported having a steady sexual partner, three (2.3%) were retired, and 58 (46.0%) were unemployed. Regarding regret, six patients expressed some regret regarding surgery, but did not want to resume their natal gender role, and one male-to-female had significant regret and would not make the same decision.

Post-surgery Utrecht dysphoria scores dropped substantially and approached reportedly normal values. The patients' appearance better matched their new gender. No one was dissatisfied with his/her overall appearance at follow-up. Satisfaction with primary sexual, secondary sexual, and non-sexual body traits improved over time. Male-to-female patients, however, were more dissatisfied with the appearance of primary sex traits than female-to-male patients. Regarding mastectomy, 27 of 38 (71.1%) female-to-male respondents (not including 11 non-respondents) reported incomplete satisfaction with their mastectomy procedure. For five of these patients, the incomplete satisfaction was because of scarring. Regarding vaginoplasty, 20 of 67 (29.8%) male-to-female respondents (not including 10 non-respondents) reported incomplete satisfaction with their vaginoplasty.

Most of the MMPI scales were already in the normal range at the time of initial testing and remained in the normal range after surgery. SCL global scores for psycho- neuroticism were minimally elevated before surgery  $143.0 \pm 40.7$  (scoring range 90 to 450) and normalized after surgery  $120.3 \pm 31.4$ . (An analysis using patient level data for only the completers was not conducted.)

*Udeze B, Abdelmawla N, Khoosal D, Terry T. Psychological functions in male-to- female people before and after surgery. Sexual and Relationship Therapy. 2008 May; 23(2):141-5. (Not in PubMed) and Megeri D, Khoosal D. Anxiety and depression in males experiencing gender dysphoria. Sexual and Relationship Therapy. 2007 Feb; 22(1):77-81. (Not in PubMed)*

Udeze et al. conducted a single-center (Leicester, United Kingdom) prospective, non-blinded, longitudinal study assessing a randomized subset of patients who had completed a non-specific psychological function tool prior to and after male-to-female reassignment surgery. Patients served as their own controls. The investigators used the WPATH criteria for patient selection. Psychiatric evaluations were routine. All patients selected for treatment were routinely asked to complete the self-administered SCL-90R voluntarily on admission to the program and post-operatively. A post-operative evaluations (psychiatric and SCL-90R assessment) were conducted within six months to minimize previously determined loss rates. The patient pool was domestic and international. There were 546 gender dysphoric patients from all over the United Kingdom and abroad, of whom 318 (58.2%) progressed to surgery. Of these, 127 were from the local Leicester area in the United Kingdom and 38 (29.9%) progressed to surgery. The mean age for the selected male-to-female patients at the time of study was  $47.33 \pm 13.26$  years (range 25 to 80) and reflected an average wait time for surgery of 14 months (range 2 months to 6 years). For this investigation, 40 male-to-female subjects were prospectively selected.

The raw SCL-90 global scores for psycho-neuroticism were unchanged over time: 48.33 prior to surgery and 49.15 after surgery. If the scale was consistent with T-scoring, the results were non-pathologic. No psychiatric disorders were otherwise identified prior to or after surgery.

Investigators from the same clinical group (Megeri, Khoosal, 2007) conducted additional testing to specifically address anxiety and depression with the Beck Depression Inventory, General Health Questionnaire (with 4 subscales), HADS, and Spielberger State and Trait Anxiety Questionnaire (STAI-X1 and STA-X2). The test population and study design appear to be the same. No absolute data were presented. Only changes in scores were presented. There were no statistically significant changes.

#### **e. Randomized, surgical patients, longitudinal, with controls**

*Mate-Kole C, Freschi M, Robin A. A controlled study of psychological and social change after surgical gender reassignment in selected male transsexuals. Br J Psychiatry. 1990 Aug;157:261-4.*

Mate-Kole et al. conducted a prospective, non-blinded, controlled, randomized, longitudinal study using investigator-designed patient self-report questionnaires and non-specific psychological tests with some normative data. The investigators assessed neuroticism and sex role in natal males with gender dysphoria who had qualified for male-to-female reassignment surgery at a single-center specialty clinic (London, United Kingdom). Forty sequential patients were alternately assigned to early reassignment surgery or to standard wait times for reassignment surgery. Patients were evaluated after acceptance and 2 years later. The criteria used to qualify for gender surgery were the 1985 standards from the Harry Benjamin International Gender Dysphoria Association. These included a  $\geq 2$  year desire to change gender, a  $\geq 1$  year demonstrable ability to live and be self-supporting in the chosen gender, and psychiatric assessment for diagnosis and reassessment at six months for diagnostic confirmation and exclusion of psychosis.

Reassignment surgery was defined as orchidectomy, penectomy, and construction of a neo-vagina. The instruments used were the CCEI for psychoneurotic symptoms and the Bem Sex Role Inventory along with an incompletely described investigator-designed survey with questions about social life and sexual activity.

The mean age and range of the entire cohort was 32.5 years (21-53). Members of the early surgery cohort had a history of attempted suicide (one patient), psychiatric treatment for non-gender issues (six patients), and first degree relatives with psychiatric histories (four patients). Members of the standard surgery cohort were similar, with a history of attempted suicide (two patients), psychiatric treatment for non-gender issues (five patients), and first degree relatives with psychiatric histories (six patients). The early surgery group had surgery approximately 1.75 years prior to the follow-up evaluation. In both groups, cross-dressing began at about age 6.

At baseline, the Bem Sex Role Inventory femininity scores were slightly higher than masculinity scores for both cohorts and were similar to Bem North American female normative scores. The scores did not change in either group over time.

At baseline, the scores for the CCEI individual domains (free floating anxiety, phobic anxiety, somatic anxiety, depression, hysteria, and obsessiveness) were similar for the cohorts. The total CCEI scores for the two cohorts were consistent with moderate symptoms (Birchnell et al. 1988). Over the two year interval, total CCEI scores increased for standard wait group and approached the relatively severe symptom category. During the same interval, scores dropped into the asymptomatic range for the post-operative patients.

The investigator-designed survey assessed changes in social and sexual activity of the prior two years, but the authors only compared patients in a given cohort to themselves. Though the researchers did not conduct statistical studies to compare the differences between the two cohorts, they did report increased participation in some, but not all, types of social activities such as sports (solo or group), dancing, dining out, visiting pubs, and visiting others. Sexual interest also increased. By contrast, pre-operative patients did not increase their participation in these activities.

## 2. External Technology Assessments

- a. CMS did not request an external technology assessment (TA) on this issue.
- b. There were no AHRQ reviews on this topic.
- c. There are no Blue Cross/Blue Shield Health Technology Assessments written on this topic within the last three years.
- d. There were two publications in the COCHRANE database, and both were tangentially related. Both noted that there are gaps in the clinical evidence base for gender reassignment surgery.  
*Twenty Years of Public Health Research: Inclusion of Lesbian, Gay, Bisexual, and Transgender Populations Boehmer U. Am J Public Health. 2002; 92: 1125–30.*

“Findings supported that LGBT issues have been neglected by public health research and that research unrelated to sexually transmitted diseases is lacking.”

*A systematic review of lesbian, gay, bisexual and transgender health in the West Midlands region of the UK compared to published UK research. West Midlands Health Technology Assessment Collaboration. Health Technology Assessment Database. Meads, et al., 2009. No.3.*

“Further research is needed but must use more sophisticated designs with comparison groups. This systematic review demonstrated that there are so many gaps in knowledge around LGBT health that a wide variety of studies are needed.”

- e. There were no National Institute for Health and Care Excellence (NICE) reviews/guidance documents on this topic.
- f. There was a technology assessment commissioned by the New Zealand Ministry of Health and conducted by New Zealand Health Technology Assessment (NZHTA) (Christchurch School of Medicine and the University of Otago).

*Tech Brief Series: Transgender Re-assignment Surgery Day P. NZHTA Report. February 2002;1(1).*  
[http://nzhta.chmeds.ac.nz/publications/trans\\_gender.pdf](http://nzhta.chmeds.ac.nz/publications/trans_gender.pdf)

The research questions included the following:

1. Are there particular subgroups of people with transsexualism who have met eligibility criteria for gender reassignment surgery (GRS) where evidence of effectiveness of that surgery exists?
2. If there is evidence of effectiveness, what subgroups would benefit from GRS?”

The authors concluded that there was not enough evidence to answer either of the research questions.

### **3. Medicare Evidence Development & Coverage Advisory Committee (MEDCAC) Meeting**

CMS did not convene a MEDCAC meeting.

### **4. Evidence-Based Guidelines**

- a. American College of Obstetricians and Gynecologists (ACOG)

Though ACOG did not have any evidence-based guidelines on this topic, they did have the following document: Health Care for Transgender Individuals: Committee Opinion  
Committee on Health Care for Underserved Women; The American College of Obstetricians and Gynecologists. Dec 2011, No. 512. *Obstet Gynecol.* 2011;118:1454-8.

“Questions [on patient visit records] should be framed in ways that do not make assumptions about gender identity, sexual orientation, or behavior. It is more appropriate for clinicians to ask their patients which terms they prefer. Language should be inclusive, allowing the patient to decide when and what to disclose. The adoption and posting of a nondiscrimination policy can also signal health care providers and patients alike that all persons will be treated with dignity and respect. Assurance of confidentiality can allow for a more open discussion, and confidentiality must be ensured if a patient is being referred to a different health care provider. Training staff to increase their knowledge and sensitivity toward transgender patients will also help facilitate a positive experience for the patient.”

- b. American Psychiatric Association

*Report of the American Psychiatric Association Task Force on Treatment of Gender Identity Disorder. Byne, W, Bradley SJ, Coleman E, Eyler AE, Green R, Menvielle EJ, Meyer-Bahlburg HFL, Richard R. Pleak RR, Tompkins DA. Arch Sex Behav. 2012; 41:759–96.*

The American Psychiatric Association (APA) was unable to identify any Randomized Controlled Trials (RCTs) regarding mental health issues for transgender individuals.



"There are some level B studies examining satisfaction/regret following sex reassignment (longitudinal follow-up after an intervention, without a control group); however, many of these studies obtained data retrospectively and without a control group (APA level G). Overall, the evidence suggests that sex reassignment is associated with an improved sense of well-being in the majority of cases, and also indicates correlates of satisfaction and regret. No studies have directly compared various levels of mental health screening prior to hormonal and surgical treatments on outcome variables; however, existing studies suggest that comprehensive mental health screening may be successful in identifying those individuals most likely to experience regrets."

Relevant Descriptions of APA Evidence Coding System/Levels:

[B] Clinical trial. A prospective study in which an intervention is made and the results of that intervention are tracked longitudinally. Does not meet standards for a randomized clinical trial."

[G] Other. Opinion-like essays, case reports, and other reports not categorized above."

#### c. Endocrine Society

Endocrine Treatment of Transsexual Persons: an Endocrine Society Clinical Practice Guideline.

*Hembree WC, Cohen-Kettenis P, Delemarre-van de Waal HA, Gooren LJ, Meyer WJ 3rd, Spack NP, Tangpricha V, Montori VM; Endocrine Society. J Clin Endocrinol Metab. 2009; 94:3132-54.*

This guideline primarily addressed hormone management and surveillance for complications of that management. A small section addressed surgery and found the quality of evidence to be low.

"This evidence-based guideline was developed using the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) system to describe the strength of recommendations and the quality of evidence, which was low or very low."

#### d. World Professional Association for Transgender Health (WPATH)

*Standards of Care for the Health of Transsexual, Transgender, and Gender-Nonconforming People (Version 7). Coleman E, Bockting W, Botzer M, Cohen-Kettenis P, DeCuypere G, Feldman J, Fraser L, Green J, Knudson G, Meyer WJ, Monstrey S, Adler RK, Brown GR, Devor AH, Ehrbar R, Ettner R, Eyler E, Garofalo R, Karasic DH, Lev AI, Mayer G, Meyer-Bahlburg H, Hall BP, Pfäfflin F, Rachlin K, Robinson B, Schechter LS, Tangpricha V, van Trotsenburg M, Vitale A, Winter S, Whittle S, Kevan R, Wylie KR, Zucker K. www.wpath.org/\_files/140/files/Standards%20of%20Care,%20V7%20Full%20Book.pdf Int J Transgend. 2011;13:165-232.*

The WPATH is "an international, multidisciplinary, professional association whose mission is to promote evidence-based care, education, research, advocacy, public policy, and respect in transsexual and transgender health."

WPATH reported, "The standards of care are intended to be flexible in order to meet the diverse health care needs of transsexual, transgender, and gender-nonconforming people. While flexible, they offer standards for promoting optimal health care and guiding the treatment of people experiencing gender dysphoria—broadly defined as discomfort or distress that is caused by a discrepancy between a person's gender identity and that person's sex assigned at birth (and the associated gender role and/or primary and secondary sex characteristics) (Fisk, 1974; Knudson, De Cuypere, & Bockting, 2010b)."

The WPATH standards of care (SOC) "acknowledge the role of making informed choices and the value of harm-reduction approaches."

The SOC noted, "For individuals seeking care for gender dysphoria, a variety of therapeutic options can be considered. The number and type of interventions applied and the order in which these take place may differ from person to person (e.g., Bockting, Knudson, & Goldberg, 2006; Bolin, 1994; Rachlin, 1999; Rachlin, Green, & Lombardi, 2008; Rachlin, Hansbury, & Pardo, 2010). Treatment options include the following:

- Changes in gender expression and role (which may involve living part time or full time in another gender role, consistent with one's gender identity);
- Hormone therapy to feminize or masculinize the body;
- Surgery to change primary and/or secondary sex characteristics (e.g., breasts/chest, external and/or internal genitalia, facial features, body contouring);
- Psychotherapy (individual, couple, family, or group) for purposes such as exploring gender identity, role, and expression; addressing the negative impact of gender dysphoria and stigma on mental health; alleviating internalized transphobia; enhancing social and peer support; improving body image; or promoting resilience."

e. American Psychological Association

Suggested citation until formally published in the American Psychologist: American Psychological Association. (2015): *Guidelines for Psychological Practice with Transgender and Gender Nonconforming People Adopted by the Council of Representatives, August 5 & 7, 2015*. [www.apa.org/practice/guidelines/transgender.pdf](http://www.apa.org/practice/guidelines/transgender.pdf)

"The purpose of the Guidelines for Psychological Practice with Transgender and Gender Nonconforming People (hereafter Guidelines) is to assist psychologists in the provision of culturally competent, developmentally appropriate, and trans-affirmative psychological practice with TGNC people."

"These Guidelines refer to psychological practice (e.g., clinical work, consultation, education, research, training) rather than treatment."

## 5. Other Reviews

a. Institute of Medicine (IOM)

*The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding*. Robert Graham (Chair); Committee on Lesbian, Gay, Bisexual, and Transgender Health Issues and Research Gaps and Opportunities. (Study Sponsor: The National Institutes of Health). Issued March 31, 2011. <http://www.nationalacademies.org/hmd/Reports/2011/The-Health-of-Lesbian-Gay-Bisexual-and-Transgender-People.aspx>

"To advance understanding of the health needs of all LGBT individuals, researchers need more data about the demographics of these populations, improved methods for collecting and analyzing data, and an increased participation of sexual and gender minorities in research. Building a more solid evidence base for LGBT health concerns will not only benefit LGBT individuals, but also add to the repository of health information we have that pertains to all people."

"Best practices for research on the health status of LGBT populations include scientific rigor and respectful involvement of individuals who represent the target population. Scientific rigor includes incorporating and monitoring culturally competent study designs, such as the use of appropriate measures to identify participants and implementation processes adapted to the unique characteristics of the target population. Respectful involvement refers to the involvement of LGBT individuals and those who represent the larger LGBT community in the research process, from design through data collection to dissemination."

b. National Institutes of Health (NIH)

National Institutes of Health Lesbian, Gay, Bisexual, and Transgender (LGBT) Research Coordinating Committee. Consideration of the Institute of Medicine (IOM) report on the health of lesbian, gay, bisexual, and transgender (LGBT) individuals. Bethesda, MD: National Institutes of Health; 2013. [http://report.nih.gov/UploadDocs/LGBT%20Health%20Report\\_FINAL\\_2013-01-03-508%20compliant.pdf](http://report.nih.gov/UploadDocs/LGBT%20Health%20Report_FINAL_2013-01-03-508%20compliant.pdf)

In response to the IOM report, the NIH LGBT research Coordinating Committee noted that most of the health research for this set of populations is "focused in the areas of Behavioral and Social Sciences, HIV (human immunodeficiency virus)/AIDS, Mental Health, and Substance Abuse. Relatively little research has been done in several key health areas for LGBT populations including the impact of smoking on health, depression, suicide, cancer, aging, obesity, and alcoholism."



## 6. Pending Clinical Trials

ClinicalTrials.gov

There is one currently listed and recently active trial directed at assessment of the clinical outcomes pertaining to individuals who have had gender reassignment surgery. The study appears to be a continuation of work conducted by investigators cited in the internal technology assessment.

NCT01072825 (Ghent, Belgium sponsor) European Network for the Investigation of Gender Incongruence (ENIGI) is assessing the physical and psychological effects of the hormonal treatment of transgender subjects in two years prior to reassignment surgery and subsequent to surgery. This observational cohort study started in 2010 and is still in progress.


## 7. Consultation with Outside Experts

Consistent with the authority at 1862(l)(4) of the Act, CMS consulted with outside experts on the topic of treatment for gender dysphoria and gender reassignment surgery.

Given that the majority of the clinical research was conducted outside of the United States, and some studies either took place in or a suggested continuity-of-care and coordination-of-care were beneficial to health outcomes, we conducted expert interviews with centers across the U.S. that provided some form of specialty-focused or coordinated care for transgender patients. These interviews informed our knowledge about the current healthcare options for transgender people, the qualifications of the professionals involved, and the uniqueness of treatment options. We are very grateful to the organizations that made time to discuss treatment for gender dysphoria with us.

From our discussions with the all of the experts we spoke with, we noted the following practices in some centers: (1) specialized training for all staff about transgender healthcare and transgender cultural issues; (2) use of an intake assessment by either a social worker or health care provider that addressed physical health, mental health, and other life factors such as housing, relationship, and employment status; (3) offering primary care services for transgender people in addition to services related to gender-affirming therapy/treatments; (4) navigators who connected patients with name-change information or other legal needs related to gender; (5) counseling for individuals, groups, and families; (6) an informed-consent model whereby individuals were often referred to as “clients” instead of “patients,” and (7) an awareness of depression among transgender people (often measured with tools such as the Adult Outcomes Questionnaire and the Patient Health Questionnaire).

## 8. Public Comments

We appreciate the thoughtful public comments we received on the proposed decision memorandum. In CMS' experience, public comments sometimes cite the published clinical evidence and give CMS useful information. Public comments that give information on unpublished evidence such as the results of individual practitioners or patients are less rigorous and therefore less useful for making a coverage determination. CMS uses the initial public comments to inform its proposed decision. CMS responds in detail to the public comments on a proposed decision when issuing the final decision memorandum. All comments that were submitted without personal health information may be viewed in their entirety by using the following link: <https://www.cms.gov/medicare-coverage-database/details/nca-view-public-comments.aspx?NCAId=282&ExpandComments=n#Results> 

### a. Initial Comment Period: December 3, 2015 – January 2, 2016

During the initial comment period, we received 103 comments. Of those, 78% supported coverage of gender reassignment surgery, 15% opposed, and 7% were neutral. The majority of comments supporting coverage were from individuals and advocacy groups.

### b. Second Comment Period: June 2, 2016 – July 2, 2016

During the second 30-day public comment period, we received a total of 45 public comments, 7 of which were not posted on the web due to personal health information content. Overall, 82% supported coverage of gender reassignment surgery, 11% opposed, and 7% were neutral or silent in their comment whether they supported or opposed coverage. Half of the comments were submitted by individuals who expressed support for coverage of gender reassignment

surgery (51%). We also received comments from physicians, providers, and other health professionals who specialize in healthcare for transgender individuals (17%). We received one comment from a municipality, the San Francisco Department of Public Health. Associations (American Medical Association, American College of Physicians, American Academy of Nursing, American Psychological Association, and LGBT PA Caucus) and advocates (Center for American Progress with many other signatories, Jamison Green & Associates) also submitted comments.

Below is a summary of the comments CMS received. In some instances, commenters identified typographical errors, context missed, and opportunities for CMS to clarify wording and classify articles for ease of reading in the memorandum. As noted earlier, when appropriate and to the extent possible, we updated the decision memorandum to reflect those corrections, improved the context, and clarified the language. In light of public comments, we re-evaluated the evidence and our summaries. We updated our summaries of the studies and clarified the language when appropriate.

## 1. Contractor Discretion and National Coverage Determination

**Comment:** Some commenters, including advocates, associations, and providers, supported CMS' decision for MAC contractor discretion/case-by-case determination for gender reassignment surgery. One stakeholder stated, "We agree with the conclusion that a NCD is not warranted at this time."

**Response:** We appreciate the support and understanding among stakeholders for our proposed decision to have the MACs determine coverage on a case-by-case basis. We have clarified in this final decision memorandum that coverage is available for gender reassignment surgery when determined reasonable and necessary and not otherwise excluded by any other relevant statutory requirements by the MAC on a case-by-case basis. "The case-by-case model affords more flexibility to consider a particular individual's medical condition than is possible when the agency establishes a generally applicable rule." (78 Fed. Reg. 48165 (August 7, 2013)).

**Comment:** Some commenters cautioned that CMS' choice to not issue a NCD at this time must not be interpreted as a national non-coverage determination or used in any way to inappropriately restrict access to coverage for transgender Medicare beneficiaries or other transgender individuals. Multiple commenters indicated their disappointment that CMS did not propose a National Coverage Determination (NCD) and, instead, chose to continue to have local MACs make the coverage decisions on a case-by-case basis. Commenters stated this could result in variability in coverage.

**Response:** We appreciate the comments. We are not issuing a NCD at this time because the available evidence for gender reassignment surgery provides limited data on specific health outcomes and the characteristics of specific patient populations that might benefit from surgery. In the absence of a NCD, the MAC's use the same statutory authority as NCDs, section 1862(a)(1)(A) of the Social Security Act (the Act). Under section 1862(a)(1)(A) an item or service must be reasonable and necessary for the diagnosis or treatment of illness or injury or to improve the functioning of a malformed body member. While CMS did not have enough evidence to issue a NCD, we believe the MACs will be able to make appropriate coverage decisions on a case-by-case basis taking into account individual characteristics of the Medicare beneficiary.

**Comment:** Some commenters sought a NCD that would establish guidelines for coverage and include elements such as a prescribed set of surgeries and a shared decision making element.

**Response:** For the reasons stated above, we are not issuing a NCD at this time and, therefore, are not establishing specific gender reassignment surgery coverage guidelines for the Medicare program. We generally agree that shared decision-making is a fundamental approach to patient-centered health care decisions and strongly encourage providers to use these types of evidence based decision aids. We have not found a shared decision aid on GRS and encourage the development of this necessary element to conduct formal shared-decision making.

**Comment:** Some commenters expressed concern that there is a misunderstanding of transgender individuals as having a disorder or being abnormal. Some commenters indicated a history of bias and discrimination within society as a whole that has occurred when transgender individuals have sought health care services from the medical community. Some commenters are concerned that the decision not to make a NCD will subject individuals seeking these services to corporate bias by Medicare contractors.

**Response:** We acknowledge the public comments and that there has been a transformation in the treatment of individuals with gender dysphoria over time. In this NCA, we acknowledge that gender dysphoria is a recognized Diagnostic and Statistical Manual of Mental Disorders (DSM) condition. With respect to the concern about potential bias by Medicare contractors, we have no reason to expect that the judgments made on specific claims will be influenced by an overriding bias, hostility to patients with gender dysphoria, or discrimination. Moreover, the Medicare statute and our regulations provide a mechanism to appeal an adverse initial decision if a claim is denied and those rights may include the opportunity for judicial review. We believe the Medicare appeals process would provide an opportunity to correct any adverse decision that was perceived to have been influenced by bias.

**Comment:** Commenters mentioned the cost of gender reassignment surgery could influence MAC decision making.

**Response:** The decisions on whether to cover gender reassignment surgery in a particular case are made on the basis of the statutory language in section 1862 of the Social Security Act that establish exclusions from coverage and would not depend on the cost of the procedure.

## 2. Coverage with Evidence Development and Research

**Comment:** In our proposed decision memorandum, we specifically invited comments on whether a study could be developed that would support coverage with evidence development (CED). One organization commented, "We strongly caution against instituting a CED protocol." Commenters were opposed to coverage limited in clinical trials, suggesting that such coverage would restrict access to care. Several commenters provided suggested topics for clinical research studies for the transgender population. For example, one commenter suggested a study of non-surgical treatment for transgender children prior to puberty.

**Response:** While we appreciate the comments supporting further research, in general, for gender reassignment surgery, we agree that CED is not the appropriate coverage pathway at this time. While CED is an important mechanism to support research and has the potential to be used to help address gaps in the current evidence, we are not aware of any available, appropriate studies, ongoing or in development, on gender reassignment surgery for individuals with gender dysphoria that could be used to support a CED decision.

## 3. Gender Reassignment Surgery as Treatment

**Comment:** One group of commenters requested that CMS consider that, "The established medical consensus is that GRS is a safe, effective, and medically necessary treatment for many individuals with gender dysphoria, and for some individuals with severe dysphoria, it is the only effective treatment."

**Response:** We acknowledge that GRS may be a reasonable and necessary service for certain beneficiaries with gender dysphoria. The current scientific information is not complete for CMS to make a NCD that identifies the precise patient population for whom the service would be reasonable and necessary.

## 4. Physician Recommendations

**Comment:** Several commenters stated that gender reassignment surgery should be covered as long as it was determined to be necessary, or medically necessary by a beneficiary's physician.

**Response:** Physician recommendation is one of many potential factors that the local MAC may consider when determining whether the documentation is sufficient to pay a claim.

## 5. WPATH Standards of Care

**Comment:** Several commenters suggested that CMS should recommend the WPATH Standards of Care (WPATH) as the controlling guideline for gender reassignment surgery. They asserted it could satisfy Medicare's reasonable and necessary criteria for determining coverage on a case-by-case basis.

**Response:** Based on our review of the evidence and conversations with the experts and patient advocates, we are aware some providers consult the WPATH Standards of Care, while others have created their own criteria and requirements for surgery, which they think best suit the needs of their patients. As such, and given that WPATH acknowledges the guidelines should be flexible, we are not in the position to endorse exclusive use of WPATH for coverage. The MACs, Medicare Advantage plans, and Medicare providers can use clinical guidelines they determine useful to inform their determination of whether an item or service is reasonable and necessary. When making this determination, local MACs may take into account physician's recommendations, the individual's clinical characteristics, and available clinical evidence relevant to that individual.

## 6. Scope of the NCA Request

**Comment:** One commenter stated that CMS did not address the full scope of the NCA request.

**Response:** The formal request for a NCD is publicly available on our tracking sheet. (<https://www.cms.gov/Medicare/Coverage/DeterminationProcess/downloads/id282.pdf>) The letter did not explicitly seek a national coverage determination related to counseling or hormone therapies, but focused on surgical remedies. CMS is aware that beneficiaries with gender dysphoria use a variety of therapies.

**Comment:** Other commenters stated the scope of the proposed decision is unnecessarily broad because it discussed therapies other than surgery. They suggested this discussion could lead to the unintended consequence of restricting access to those services for transgender Medicare beneficiaries and other transgender individuals.

**Response:** As we noted in our proposed decision, our decision focused only on gender reassignment surgery. In the course of reviewing studies related to those surgeries, occasionally authors discussed other therapies that were mentioned in our summaries of the evidence. To the extent possible, we have modified our decision to eliminate the discussion of other therapies which were not fully evaluated in this NCA.

## 7. NCA Question

**Comment:** Some commenters expressed concern about the phrasing of the question in this NCA.

**Response:** The phrasing of the research question is consistent with most NCAs and we believe it is appropriate.

## 8. Evidence Summary and Analysis

**Comment:** Several commenters disagreed with our summary of the clinical evidence and analysis. A few commenters contended that the overall tone of the review was not neutral and seemed biased or flawed. One commenter noted that the Barrett publication was available on the Internet.

**Response:** We appreciate the comments that identified technical errors, and we made the necessary revisions to this document. However, we disagree with the contention that our evidence review was not neutral and seemed biased or flawed. We believe that the summary and analysis of the clinical evidence are objective. As with previous NCAs, our review of the evidence was rigorous and methodical. Additionally, we reviewed the Barrett publication, but it did not meet our inclusion criteria to be included in the Evidence section.

## 9. Evidence Review with Transgender Experts

**Comment:** Several commenters requested that CMS re-review the clinical evidence discussed in the proposed decision memorandum with outside experts in the field of transgender health and transition/gender reassignment-related surgeries. Several offered the expertise within their organization to assist in this effort.

**Response:** We appreciate these comments and the transgender health community's willingness to participate. For this NCA we discussed gender reassignment surgery protocols with experts, primarily in coordinated care settings. Additionally, the public comment periods provide opportunities for expert stakeholder input. According to our process for all NCAs, we do not jointly review evidence with external stakeholders but have carefully reviewed the very detailed comments submitted by a number of outside experts in transgender health care.

#### 10. Previous Non-Coverage NCD

**Comment:** One commenter noted that they thought research studies for gender reassignment surgery could not take place when the old NCD that prohibited coverage for gender reassignment surgery was in effect.

**Response:** CMS does not directly conduct clinical studies or pay for research grants. Some medical services are non-covered by Medicare; however, national non-coverage does not preclude research via a number of avenues and other funding entities such as the National Institutes of Health. In this instance, the previous NCD did not preclude interested parties from funding research for gender reassignment surgery that could have been generalizable to the Medicare population.

#### 11. How the Medicare Population Differs from the General Population

**Comment:** One commenter questioned how the Medicare population differed from the general population, and why any differences would be important in our decision-making.

**Response:** The Medicare population is different from the general population in age (65 years and older) and/or disability as defined by the Social Security Administration. Due to the biology of aging, older adults may respond to health care treatments differently than younger adults. These differences can be due to, for example, multiple health conditions or co-morbidities, longer duration needed for healing, metabolic variances, and impact of reduced mobility. All of these factors can impact health outcomes. The disabled Medicare population, who are younger than age 65, is different from the general population and typical study populations due to the presence of the causes of disability such as psychiatric disorders, musculoskeletal health issues, and cardiovascular issues.

#### 12. Medicare Evidence Development & Coverage Advisory Committee (MEDCAC)

**Comment:** One commenter suggested CMS should have convened a MEDCAC for this topic.

**Response:** We appreciate the comment. Given the limited evidence, we did not believe a MEDCAC was warranted according to our guidance document entitled "Factors CMS Considers in Referring Topics to the Medicare Evidence Development & Coverage Advisory Committee" (<https://www.cms.gov/Regulations-and-Guidance/Guidance/FACA/MEDCAC.html>).<sup>2</sup>

#### 13. §1557 of the Affordable Care Act (ACA)

**Comment:** Some commenters asserted that by not explicitly covering gender reassignment surgery at the national level, CMS was discriminating against transgender beneficiaries in conflict with Section 1557 of the Accountable Care Act (ACA).

**Response:** This decision does not affect the independent obligation of covered entities, including the Medicare program and MACs, to comply with Section 1557 in making individual coverage decisions. In accordance with Section 1557, MACs will apply neutral nondiscriminatory criteria when making case-by-case coverage determinations related to gender reassignment surgery.

#### 14. Medicaid

**Comment:** Some commenters observed that some states cover gender reassignment surgery through Medicaid or require commercial insurers operating in the state to cover the surgery.

**Response:** We appreciate the information about Medicaid and state requirements; however, State decisions are separate from Medicare coverage determinations. We make evidence-based determinations based on our statutory standards and processes.

#### 15. Commercial Insurers

**Comment:** In several instances, commenters told us that the healthcare industry looks to CMS coverage determinations to guide commercial policy coverage.

**Response:** CMS makes evidence-based national coverage determinations based on our statutory standards and processes as defined in the Social Security Act, which may not be the same standards that are used in commercial insurance policies or by other health care programs. In addition as noted above, the Medicare population is different (e.g., Medicare covers 95% of adults 65 and older) than the typical population under commercial insurers. We do not issue coverage decisions to drive policy for other health organizations' coverage in one way or the other.

## 16. Healthcare for Transgender Individuals

**Comment:** Numerous professional associations wrote to CMS to explain their support for access to healthcare for transgender individuals.

**Response:** CMS recognizes that transgender beneficiaries have specific healthcare needs. Many health care treatments are available. We encourage all beneficiaries to utilize their Medicare benefits to help them achieve their best health.

## 17. Intended Use of the Decision Memorandum

**Comment:** Several commenters expressed concern that the analysis provided in the proposed and final decision memorandums may be used by individuals, entities, or payers for purposes unrelated to Medicare such as denial of coverage for transgender-related surgeries.

**Response:** The purpose of the decision memoranda is to memorialize CMS' analysis of the evidence, provide responses to the public comments received, and to make available the clinical evidence and other data used in making our decision consistent with our obligations under the § 1862 of the Act. The NCD process is open and transparent and our decisions are publicly available. Congress requires that we provide a clear statement of the basis for our determinations. The decision memoranda are an important part of the record of the NCD. Our focus is the Medicare population which, as noted above, is different than the general population in a number of ways. Other entities may conduct separate evidence reviews and analyses that are suited for their specific populations.

## 18. Cost Barriers to Care and Effects

**Comment:** A few commenters stated that without Medicare coverage, surgery is difficult to afford and there may be a risk of negative consequences for the individual. One commenter suggested that CMS should consider prior-authorization for these surgeries.

**Response:** CMS is aware that paying out-of-pocket for medical care is a strain on a beneficiary's finances. We are also aware of beneficiaries' hesitancy to undergo surgery prior to knowing whether or not Medicare will pay the claim. Gender reassignment surgeries are not the only procedures whereby payment is not determined until after the provider submits the claim to Medicare. Importantly, documentation for the claims need to be explicit about what procedures were performed and include the appropriate information in the documentation to justify using the code or codes for surgery. Of note, CMS has claims data that indicate Medicare has paid for gender reassignment surgeries in the recent past. Determining which services are designated for prior-authorization is outside of the scope of the NCA process.

## 19. Surgical Risks and Benefits

**Comment:** A number of commenters conveyed the benefits of gender reassignment surgery, while other commenters expressed concern that gender reassignment surgery was harmful.

**Response:** We appreciate these comments.

## 20. Expenditure of Federal Funds

**Comment:** Some commenters opposed spending Medicare program funds on gender reassignment surgery for a variety of reasons. For example, some commenters believe it is an “elective” procedure. Other commenters suggested that funds should first be spent on other priorities such as durable medical equipment (DME) or mobility items such as power chairs; increasing reimbursement to providers; or that spending should be limited to the proportion to the transgender adult population in the Medicare program.

**Response:** The purpose of this NCA is to determine whether or not CMS should issue a NCD to cover surgery for patients who have gender dysphoria. NCAs do not establish payment amounts or spending priorities and, therefore, these comments are outside the scope of this consideration.

## VIII. CMS Analysis

National coverage determinations are determinations by the Secretary with respect to whether or not a particular item or service is covered nationally under § 1862(l)(6) of the Act. In general, in order to be covered by Medicare, an item or service must fall within one or more benefit categories contained within Part A or Part B and must not be otherwise excluded from coverage.

Moreover, in most circumstances, the item or service must be reasonable and necessary for the diagnosis or treatment of illness or injury or to improve the functioning of a malformed body member (§1862(a)(1)(A)). The Supreme Court has recognized that “[t]he Secretary’s decision as to whether a particular medical service is ‘reasonable and necessary’ and the means by which she implements her decision, whether by promulgating a generally applicable rule or by allowing individual adjudication, are clearly discretionary decisions.” *Heckler v. Ringer*, 466 U.S. 602, 617 (1984). See also, 78 Fed. Reg. 48,164, 48,165 (August 7, 2013)

When making national coverage determinations, we consider whether the evidence is relevant to the Medicare beneficiary population. In considering the generalizability of the results of the body of evidence to the Medicare population, we carefully consider the demographic characteristics and comorbidities of study participants as well as the provider training and experience. This section provides an analysis of the evidence, which included the published medical literature and guidelines pertaining to gender dysphoria, that we considered during our review to answer the question:

*Is there sufficient evidence to conclude that gender reassignment surgery improves health outcomes for Medicare beneficiaries with gender dysphoria?*

CMS carefully considered all the studies listed in this decision memorandum to determine whether they answered the question posed in this NCA. While there appears to be many publications regarding gender reassignment surgery, it became clear that many of the publications did not meet our inclusion/exclusion criteria as explained earlier in the decision memorandum.

Thirty-three papers were eligible based on our inclusion/exclusion criteria for the subsequent review (Figure 1). All studies reviewed had potential methodological flaws which we describe below.

### A. Quality of the Studies Reviewed

Overall, the quality and strength of evidence were low due to mostly observational study designs with no comparison groups, subjective endpoints, potential confounding (a situation where the association between the intervention and outcome is influenced by another factor such as a co-intervention), small sample sizes, lack of validated assessment tools, and considerable lost to follow-up (Appendices C and F). The impact of a specific therapeutic intervention can be difficult to determine when there are multiple serial treatments such as psychotherapy, hormone treatment and surgery. To reduce confounding, outcome assessment just prior to and after surgery such as in a longitudinal study would be helpful. The objective endpoints included psychiatric treatment, attempted suicide, requests for surgical reversal, morbidity (direct and indirect adverse events), and mortality (Appendix F). CMS agrees with the utility of these objective endpoints. Quality of life, while important, is more difficult to measure objectively (Appendix E).



Of the 33 studies reviewed, published results were conflicting – some were positive; others were negative. Collectively, the evidence is inconclusive for the Medicare population. The majority of studies were non-longitudinal, exploratory type studies (i.e., in a preliminary state of investigation or hypothesis generating), or did not include concurrent controls or testing prior to and after surgery. Several reported positive results but the potential issues noted above reduced strength and confidence. After careful assessment, we identified six studies that could provide useful information (Figure 1). Of these, the four best designed and conducted studies that assessed quality of life before and after surgery using validated (albeit non-specific) psychometric studies did not demonstrate clinically significant changes or differences in psychometric test results after GRS. (Heylens et al., 2014; Ruppin, Pfafflin, 2015; Smith et al., 2005; Udeze et al., 2008) (Appendix C Panel A and Appendix G.)

Two studies (three articles) assessed functional endpoints (request for surgical reassignment reversal and morbidity/mortality) (Dhejne et al., 2011; Dhejne et al., 2014 along with Landén et al., 1998) (Figure 1 and Appendix C, Panel A and Appendix G). Although the data are observational, they are robust because the Swedish national database is comprehensive (including all patients for which the government had paid for surgical services) and is notable for uniform criteria to qualify for treatment and financial coverage by the government. Dhejne et al. (2014) and Landén et al. (1998) reported cumulative rates of requests for surgical reassignment reversal or change in legal status of 3.3% while Dhejne et al. (2014) reported 2.2%. The authors indicated that the later updated calculation had the potential to be an underestimate because the most recent surgical cohorts were larger in size and had shorter periods of follow-up.

Dhejne et al., (2011) tracked all patients who had undergone reassignment surgery (mean age 35.1 years) over a 30 year interval and compared them to 6,480 matched controls. The study identified increased mortality and psychiatric hospitalization compared to the matched controls. The mortality was primarily due to completed suicides (19.1-fold greater than in control Swedes), but death due to neoplasm and cardiovascular disease was increased 2 to 2.5 times as well. We note, mortality from this patient population did not become apparent until after 10 years. The risk for psychiatric hospitalization was 2.8 times greater than in controls even after adjustment for prior psychiatric disease (18%). The risk for attempted suicide was greater in male-to-female patients regardless of the gender of the control. Further, we cannot exclude therapeutic interventions as a cause of the observed excess morbidity and mortality. The study, however, was not constructed to assess the impact of gender reassignment surgery *per se*.

We believe at minimum study designs should have a pre-test/post-test longitudinal design accompanied by characterization of all patients lost to follow-up over the entire treatment series as well as those patients who did not complete questionnaires, and the use of psychometric quality-of-life tools which are well validated with linkage to “hard” (objective) patient outcomes in this particular patient population (Trentacosti 2007, PRO 2009) (Appendices C and D).

## Patient Care

Clinical evidentiary questions regarding the care of patients with gender dysphoria remain. Many of the publications focused on aspects of surgical technique as opposed to long-term patient outcomes. The specific type(s) of gender/sex reassignment surgery (e.g., genital, non-genital) that could improve health outcomes in adults remain(s) uncertain because most studies included patients who had undertaken one or more of a spectrum of surgical procedures or did not define the specific types of surgical procedures under study. Furthermore, surgical techniques have changed significantly over the last 60 years and may not reflect current practice (Bjerrome Ahlin et al., 2014; Doornaert, 2011; Green, 1998; Pauly, 1968; Selvaggi et al., 2007; Selvaggi, Bellringer, 2011; Tugnet et al., 2007; Doornaert, 2011).

The WPATH care recommendations present a general framework and guidance on the care of the transgender individual. The standards of care are often cited by entities that perform gender reassignment surgery. WPATH notes, “More studies are needed that focus on the outcomes of current assessment and treatment approaches for gender dysphoria.” Appendix D in the WPATH Standards of Care briefly describes their evidence base and acknowledges the historical problems with evidentiary standards, the preponderance of retrospective data, and the confounding impact of multiple interventions, specifically distinguishing the impact of hormone therapy from surgical intervention.

Additionally, CMS met with several stakeholders and conducted several interviews with centers that focus on healthcare for transgender individuals in the U.S. Primary care rather than gender reassignment surgery was often the main focus. Few of the U.S.-based reassignment surgeons we could identify work as part of an integrated practice, and few provide the most complex procedures.



## Psychometric Tools

CMS reviewed psychometric endpoints because gender dysphoria (inclusive of prior nomenclature) describes an incongruence between the gender assigned at birth and the gender(s) with which the person identifies.

The psychometric tools used to assess outcomes have limitations. Most instruments that were specific for gender dysphoria were designed by the investigators themselves or by other investigators within the field using limited populations and lacked well documented test characterization. (Appendices E and F) By contrast, test instruments with validation in large populations were non-specific and lacked validation in the gender dysphoric patient populations. (Appendices E and F). In addition, the presentation of psychometric results must be accompanied by enough information about the test itself to permit adequate interpretation of test results. The relevant diagnostic cut-points for scores and changes in scores that are clinically significant should also be scientifically delineated for interpretation.

## Generalizability

It is difficult to generalize these study results to the current Medicare population. Many of the studies are old given they were conducted more than 10 years ago. Most of these studies were conducted outside of the U.S. in very different medical systems for treatment and follow-up. Many of the programs were single-site centers without replication elsewhere. The study populations were young and without significant physical or psychiatric co-morbidity (Appendix D). As noted earlier, psychiatric co-morbidity may portend poor outcomes (Asscheman et al., 2011; Landén et al., 1998).

## Knowledge Gaps

This patient population faces complex and unique challenges. The medical science in this area is evolving. This review has identified gaps in the evidentiary base as well as recommendations for good study designs. The Institute of Medicine, the National Institutes of Health, and others also identified many of the gaps in the data. (Boehmer, 2002; HHS-HP, 2011; IOM, 2011; Kreukels-ENIGI, 2012; Lancet, 2011; Murad et al., 2010; NIH-LGBT, 2013) The current or completed studies listed in ClinicalTrials.gov are not structured to assess these gaps. These gaps have been delineated as they represent areas in which patient care can be optimized and are opportunities for much needed research.

## B. Health Disparities

Four studies included information on racial or ethnic background. The participants in the three U.S. based studies were predominantly Caucasian (Beatrice, 1985; Meyer, Reter, 1979; Newfield et al., 2006). All of the participants in the single Asian study were Chinese (Tsoi, 1993). Additional research is needed in this area.

## C. Summary

Based on an extensive assessment of the clinical evidence as described above, there is not enough high quality evidence to determine whether gender reassignment surgery improves health outcomes for Medicare beneficiaries with gender dysphoria and whether patients most likely to benefit from these types of surgical intervention can be identified prospectively.

The knowledge on gender reassignment surgery for individuals with gender dysphoria is evolving. Much of the available research has been conducted in highly vetted patients at select care programs integrating psychotherapy, endocrinology, and various surgical disciplines. Additional research of contemporary practice is needed. To assess long-term quality of life and other psychometric outcomes, it will be necessary to develop and validate standardized psychometric tools in patients with gender dysphoria. Further, patient preference is an important aspect of any treatment. As study designs are completed, it is important to include patient-centered outcomes.

Because CMS is mindful of the unique and complex needs of this patient population and because CMS seeks sound data to guide proper care of the Medicare subset of this patient population, CMS strongly encourages robust clinical studies with adequate patient protections that will fill the evidence gaps delineated in this decision memorandum. As the Institute of Medicine (IOM, 2011) importantly noted: "Best practices for research on the health status of LGBT populations include scientific rigor and respectful involvement of individuals who represent the target population. Scientific rigor includes incorporating and monitoring culturally competent study designs, such as the use of appropriate

measures to identify participants and implementation processes adapted to the unique characteristics of the target population. Respectful involvement refers to the involvement of LGBT individuals and those who represent the larger LGBT community in the research process, from design through data collection to dissemination.”

## IX. Decision

Currently, the local Medicare Administrative Contractors (MACs) determine coverage of gender reassignment surgery on a case-by-case basis. We have received a complete, formal request to make a national coverage determination on surgical remedies for gender identity disorder (GID), now known as gender dysphoria. The Centers for Medicare & Medicaid Services (CMS) is not issuing a National Coverage Determination (NCD) at this time on gender reassignment surgery for Medicare beneficiaries with gender dysphoria because the clinical evidence is inconclusive for the Medicare population.

In the absence of a NCD, coverage determinations for gender reassignment surgery, under section 1862(a)(1)(A) of the Social Security Act (the Act) and any other relevant statutory requirements, will continue to be made by the local MACs on a case-by-case basis. To clarify further, the result of this decision is not national non-coverage rather it is that no national policy will be put in place for the Medicare program. In the absence of a national policy, MACs will make the determination on whether or not to cover gender reassignment surgery based on whether gender reassignment surgery is reasonable and necessary for the individual beneficiary after considering the individual's specific circumstances. For Medicare beneficiaries enrolled in Medicare Advantage (MA) plans, the initial determination of whether or not surgery would be reasonable and necessary will be made by the MA plans.

Consistent with the request CMS received, the focus of this National Coverage Analysis (NCA) was gender reassignment surgery. Specific types of surgeries were not individually assessed. We did not analyze the clinical evidence for counseling or hormone therapy treatments for gender dysphoria. As requested by several public commenters, we have modified our final decision memorandum to remove language that was beyond the scope of the specific request. We are not making a national coverage determination relating to counseling, hormone therapy treatments, or any other potential treatment for gender dysphoria.

While we are not issuing a NCD, CMS encourages robust clinical studies that will fill the evidence gaps and help inform which patients are most likely to achieve improved health outcomes with gender reassignment surgery, which types of surgery are most appropriate, and what types of physician criteria and care setting(s) are needed to ensure that patients achieve improved health outcomes.

### A. Appendix A

#### Diagnostic & Statistical Manual of Mental Disorders (DSM) Criteria for Disorders of Gender Identity since 1980

DSM Version	Condition Name	Criteria	Criteria	Comments
DSM III 1980 <i>Chapter: Psychosexual Disorders</i>	<b><i>Trans- sexualism</i></b> 302.5x <i>[Gender Identity Disorder of Child-hood (302.6)]</i>	Required A (cross- gender identification) and B (aversion to one's natal gender) criteria Dx excluded by physical intersex condition Dx excluded by another mental disorder, e.g., schizophrenia	Sense of discomfort and inappropriateness about one's anatomic sex. Wish to be rid of one's own genitals and to live as a member of the other sex. The disturbance has been continuous (not limited to periods of stress) for at least 2 years.	Further characterization by sexual orientation Distinguished from Atypical Gender Identity Disorder 302.85

<b>DSM III-Revised 1987</b> <i>TS classified as an Axis II dx (personality disorders and mental retardation) in a different chapter. GID included under Disorders Usually First Evident in Infancy, Childhood, Adolescence</i>	<b>Trans-sexualism (TS) (302.50)</b> <i>[GID of C]</i>	Required A and B criteria	Persistent discomfort and sense of inappropriateness about one's assigned sex. Persistent preoccupation for at least 2 years with getting rid of one's 1° and 2° sex characteristics and acquiring the sex characteristics of the other sex. Has reached puberty	Further characterization by sexual orientation Distinguished from Gender Identity Disorder of Adolescence or Adulthood, Non-transsexual Type <ul style="list-style-type: none"> <li>e.g., cross-dressing not for the purposes of sexual excitement</li> </ul> Gender Identity Disorder Not Otherwise Specified 302.6 <ul style="list-style-type: none"> <li>e.g., intersex conditions</li> </ul> Gender Identity Disorder Not Otherwise Specified 302.85 <ul style="list-style-type: none"> <li>e.g., persistent preoccupation with castration or penectomy w/o desire to acquire the sex traits of the other sex</li> </ul>
	<b>GID of adulthood,</b> non-transsexual type, added			
<b>DSM IV 1994</b> <i>Chapter: Sexual &amp; Gender Identity Disorders</i>	<b>Gender Identity Disorder</b> in Adolescents and Adults (302.85) (Separate criteria & code for children, but same name)	Required A and B criteria Dx excluded by physical intersex condition	Cross-gender identification <ul style="list-style-type: none"> <li>e.g., Stated desire to be another sex</li> <li>e.g., Desire to live or be treated as a member of the other sex</li> <li>e.g., conviction that he/she has the typical feelings and reactions of the other sex</li> <li>e.g., frequent passing as the other sex</li> </ul> Persistent discomfort with his/her sex or sense of inappropriateness in the gender role of that sex. <ul style="list-style-type: none"> <li>e.g., belief the he/she was born the wrong sex</li> <li>e.g., preoccupation with getting rid of 1° and 2° sex characteristics &amp;/or acquiring sexual traits of the other sex</li> <li>Clinically significant distress or impairment in social, occupational, or other important areas of functioning</li> </ul>	Further characterization by sexual orientation Distinguished from Gender Identity Disorder Not Otherwise Specified 302.6 <ul style="list-style-type: none"> <li>e.g., intersex conditions</li> <li>e.g., stress related cross-dressing</li> <li>e.g., persistent preoccupation with castration or penectomy w/o desire to acquire the sex traits of the other sex</li> </ul>

<b>DSM IV- Revised 2000</b> <i>Chapter: Sexual &amp; Gender Identity Disorders</i>	<b><i>Gender Identity Disorder</i></b> (Term trans- sexual-ism eliminated)	Required A & B criteria Dx excluded by physical intersex condition	Cross-gender identification <ul style="list-style-type: none"> <li>• e.g., stated desire to be the other sex</li> <li>• e.g., desire to live or be treated as the other sex</li> <li>• e.g., conviction that he/she has the typical feelings &amp; reactions of the other sex</li> <li>• e.g., frequent passing as the other sex</li> </ul> Persistent discomfort with his or her sex OR sense of inappropriateness in the gender role of that sex <ul style="list-style-type: none"> <li>• e.g., belief the he/she was born the wrong sex</li> <li>• e.g., preoccupation with getting rid of 1° and 2° sex characteristics &amp;/or acquiring sexual traits of the other sex</li> </ul> Clinically significant distress or impairment in social, occupational, or other important areas of functioning	Outcome may depend on time of onset Further characterization by sexual orientation Distinguished from Gender Identity Disorder Not Otherwise Specified 302.6 <ul style="list-style-type: none"> <li>• e.g., intersex conditions</li> <li>• e.g., stress related cross-dressing</li> <li>• e.g., persistent preoccupation with castration or penectomy w/o desire to acquire the sex traits of the other sex</li> </ul>
---	---	--	---	--

<b>DSM V 2013</b> <i>Separate Chapter from Sexual Dysfunctions &amp; Paraphilic Disorders</i>	<b>Gender Dysphoria</b> <i>(302.85)</i>	<p>Gender nonconformity itself not considered to be a mental disorder</p> <p>The dysphoria associated with the gender incongruence is</p> <p>Eliminates A &amp; B criteria</p> <p>Considers gender incongruence to be a spectrum</p> <p>Considers intersex/ "disorders of sex development" to be a subsidiary and not exclusionary to dx of GD</p>	<ul style="list-style-type: none"> <li>• Marked discordance between natal 1° and 2° sex characteristics* and experienced/expressed gender</li> <li>• Conviction that he/she has the typical feelings &amp; reactions of the other sex (or some alternative gender)</li> <li>• Marked desire to be the other sex (or some alternative gender)</li> <li>• Marked desire to desire be treated as the other sex (or some alternative gender)</li> <li>• Marked desire to be rid of natal 1° and 2° sex characteristics**</li> <li>• Marked desire to acquire 1° and 2° sex characteristics of the other sex (or some alternative gender)</li> </ul> <p>Clinically significant distress or impairment in social, occupational, or other important areas of functioning</p> <p>* or in young adolescents, the anticipated 2° sex characteristics</p> <p>** or in young adolescents, prevent the development of the anticipated 2° sex characteristics</p> <p>≥ 6 month marked discordance between natal gender &amp; experienced/expressed gender as demonstrated by ≥ 6 criteria:</p> <ul style="list-style-type: none"> <li>• Strong desire to be of the other gender or an insistence that one is of another gender.</li> <li>• Strong preference for cross-gender roles in make-believe play.</li> <li>• Strong preference for the toys, games, or activities of the other gender.</li> <li>• Strong preference for playmates of the other gender.</li> <li>• In boys, strong preference for cross-dressing; in girls, strong preference for wearing masculine clothing</li> <li>• In boys, rejection of masculine toys, games, activities, avoidance of rough and tumble play; in girls, rejection of feminine toys, games, and activities.</li> </ul>	<p>Includes diagnosis for post transition state to permit continued treatment access</p> <p>Includes disorders of sexual development such as congenital hyperplasia and androgen insensitivity syndromes</p>
	<b>Unspecified Gender Dysphoria</b> <i>(302.6) (F64.9)</i>		<p>This category applies to presentations in which sx c/w gender dysphoria that cause clinically significant distress or impairment, but do not meet the full criteria for gender dysphoria &amp; the reason for not meeting the criteria is not provided.</p>	
	<b>Specified Gender Dysphoria</b> <i>302.6 (F64.8)</i>		<p>If the reason that the presentation does not meet the full criteria is provided then this dx should be used</p>	

C/W=consistent with Dx=diagnosis GD=gender dysphoria Sx=symptoms TS=transsexual 1°=primary 2°=secondary

## B. Appendix B

## 1. General Methodological Principles of Study Design

When making national coverage determinations, CMS evaluates relevant clinical evidence to determine whether or not the evidence is of sufficient quality to support a finding that an item or service is reasonable and necessary. The overall objective for the critical appraisal of the evidence is to determine to what degree we are confident that: 1) the specific assessment questions can be answered conclusively; and 2) the intervention will improve health outcomes for patients.

We divide the assessment of clinical evidence into three stages: 1) the quality of the individual studies; 2) the generalizability of findings from individual studies to the Medicare population; and 3) overarching conclusions that can be drawn from the body of the evidence on the direction and magnitude of the intervention's potential risks and benefits.

The methodological principles described below represent a broad discussion of the issues we consider when reviewing clinical evidence. However, it should be noted that each coverage determination has its unique methodological aspects.

### Assessing Individual Studies

Methodologists have developed criteria to determine weaknesses and strengths of clinical research. Strength of evidence generally refers to: 1) the scientific validity underlying study findings regarding causal relationships between health care interventions and health outcomes; and 2) the reduction of bias. In general, some of the methodological attributes associated with stronger evidence include those listed below:

- Use of randomization (allocation of patients to either intervention or control group) in order to minimize bias.
- Use of contemporaneous control groups (rather than historical controls) in order to ensure comparability between the intervention and control groups.
- Prospective (rather than retrospective) studies to ensure a more thorough and systematic assessment of factors related to outcomes.
- Larger sample sizes in studies to demonstrate both statistically significant as well as clinically significant outcomes that can be extrapolated to the Medicare population. Sample size should be large enough to make chance an unlikely explanation for what was found.
- Masking (blinding) to ensure patients and investigators do not know to which group patients were assigned (intervention or control). This is important especially in subjective outcomes, such as pain or quality of life, where enthusiasm and psychological factors may lead to an improved perceived outcome by either the patient or assessor.

Regardless of whether the design of a study is a randomized controlled trial, a non-randomized controlled trial, a cohort study or a case-control study, the primary criterion for methodological strength or quality is the extent to which differences between intervention and control groups can be attributed to the intervention studied. This is known as internal validity. Various types of bias can undermine internal validity. These include:

- Different characteristics between patients participating and those theoretically eligible for study but not participating (selection bias).
- Co-interventions or provision of care apart from the intervention under evaluation (performance bias).
- Differential assessment of outcome (detection bias).
- Occurrence and reporting of patients who do not complete the study (attrition bias).

In principle, rankings of research design have been based on the ability of each study design category to minimize these biases. A randomized controlled trial minimizes systematic bias (in theory) by selecting a sample of participants from a particular population and allocating them randomly to the intervention and control groups. Thus, in general, randomized controlled studies have been typically assigned the greatest strength, followed by non-randomized clinical trials and controlled observational studies. The design, conduct and analysis of trials are important factors as well. For example, a well-designed and conducted observational study with a large sample size may provide stronger evidence than a poorly designed and conducted randomized controlled trial with a small sample size. The following is a representative list of study designs (some of which have alternative names) ranked from most to least methodologically rigorous in their potential ability to minimize systematic bias:

- Randomized controlled trials
- Non-randomized controlled trials
- Prospective cohort studies
- Retrospective case control studies
- Cross-sectional studies
- Surveillance studies (e.g., using registries or surveys)
- Consecutive case series
- Single case reports

When there are merely associations but not causal relationships between a study's variables and outcomes, it is important not to draw causal inferences. Confounding refers to independent variables that systematically vary with the causal variable. This distorts measurement of the outcome of interest because its effect size is mixed with the effects of other extraneous factors. For observational, and in some cases randomized controlled trials, the method in which confounding factors are handled (either through stratification or appropriate statistical modeling) are of particular concern. For example, in order to interpret and generalize conclusions to our population of Medicare patients, it may be necessary for studies to match or stratify their intervention and control groups by patient age or co-morbidities.

Methodological strength is, therefore, a multidimensional concept that relates to the design, implementation and analysis of a clinical study. In addition, thorough documentation of the conduct of the research, particularly study selection criteria, rate of attrition and process for data collection, is essential for CMS to adequately assess and consider the evidence.

### **Generalizability of Clinical Evidence to the Medicare Population**

The applicability of the results of a study to other populations, settings, treatment regimens and outcomes assessed is known as external validity. Even well-designed and well-conducted trials may not supply the evidence needed if the results of a study are not applicable to the Medicare population. Evidence that provides accurate information about a population or setting not well represented in the Medicare program would be considered but would suffer from limited generalizability.

The extent to which the results of a trial are applicable to other circumstances is often a matter of judgment that depends on specific study characteristics, primarily the patient population studied (age, sex, severity of disease and presence of co-morbidities) and the care setting (primary to tertiary level of care, as well as the experience and specialization of the care provider). Additional relevant variables are treatment regimens (dosage, timing and route of administration), co-interventions or concomitant therapies, and type of outcome and length of follow-up.

The level of care and the experience of the providers in the study are other crucial elements in assessing a study's external validity. Trial participants in an academic medical center may receive more or different attention than is typically available in non-tertiary settings. For example, an investigator's lengthy and detailed explanations of the potential benefits of the intervention and/or the use of new equipment provided to the academic center by the study sponsor may raise doubts about the applicability of study findings to community practice.

Given the evidence available in the research literature, some degree of generalization about an intervention's potential benefits and harms is invariably required in making coverage determinations for the Medicare population. Conditions that assist us in making reasonable generalizations are biologic plausibility, similarities between the populations studied and Medicare patients (age, sex, ethnicity and clinical presentation) and similarities of the intervention studied to those that would be routinely available in community practice.

A study's selected outcomes are an important consideration in generalizing available clinical evidence to Medicare coverage determinations. One of the goals of our determination process is to assess health outcomes. These outcomes include resultant risks and benefits such as increased or decreased morbidity and mortality. In order to make this determination, it is often necessary to evaluate whether the strength of the evidence is adequate to draw conclusions about the direction and magnitude of each individual outcome relevant to the intervention under study. In addition, it is important that an intervention's benefits are clinically significant and durable, rather than marginal or short-lived. Generally, an intervention is not reasonable and necessary if its risks outweigh its benefits.

If key health outcomes have not been studied or the direction of clinical effect is inconclusive, we may also evaluate the strength and adequacy of indirect evidence linking intermediate or surrogate outcomes to our outcomes of interest.

### Assessing the Relative Magnitude of Risks and Benefits

Generally, an intervention is not reasonable and necessary if its risks outweigh its benefits. Health outcomes are one of several considerations in determining whether an item or service is reasonable and necessary. CMS places greater emphasis on health outcomes actually experienced by patients, such as quality of life, functional status, duration of disability, morbidity and mortality, and less emphasis on outcomes that patients do not directly experience, such as intermediate outcomes, surrogate outcomes, and laboratory or radiographic responses. The direction, magnitude, and consistency of the risks and benefits across studies are also important considerations. Based on the analysis of the strength of the evidence, CMS assesses the relative magnitude of an intervention or technology's benefits and risk of harm to Medicare beneficiaries.

### Appendix C

#### Patient Population: Enrolled & Treated with Sex Reassignment Surgery Loss of Patients & Missing Data

##### Panel A (Controlled Studies)

Author	Study Type	Recruitment Pool	Enrolled	% GRS	Completion
Dhejne 2011	Longitudinal Controlled	804 w GD	324	324 (100%)	-
Dhejne 2014 Landén	Longitudinal for test variable Controlled	767 applied for SRS 25 applications denied. 61 not granted full legal status 15 formal applications for surgical reversal	681	681 (100%)	NA: Clinical data extracted retrospectively in earlier paper
Heylens	Longitudinal Controlled	90 applicants for SRS 33 excluded 11 later excluded had not yet received SRS by study close.	57 (→46)	46 (80.7%) Only those w SRS evaluated	Psycho-social survey missing data for 3 at baseline & 4 after SRS. SCL90 not completed by 1 at baseline, 10 after hormone tx, & 4 after SRS →missing data for another 1.1% to 11.1%.
Kockott	Longitudinal Controlled	80 applicants for SRS 21 excluded	59	32 (54.2%) went to surgery	1 preoperative patient was later excluded b/c lived completely in aspired gender w/o SRS. Questions on financial sufficiency not answered by 1 surgical pt. Questions on sexual satisfaction & gender contentment not answered by 1 & 2 patients awaiting surgery respectively.
Mate-Kole 1990	Longitudinal Controlled	40 sequential patients of accepted patients. The number in the available patient pool was not specified.	40	20 (50%) went to surgery	-



Meyer	Longitudinal Controlled	Recruitment pool: 100 50 were excluded.	50	15 (30%) had undergone surgery 14 (28%) underwent surgery later	The assessments of all were complete
Rakic	Longitudinal Controlled	92 were evaluated 54 were excluded from surgery 2 post SRS were lost to follow-up 2 post SRS were excluded for being in the peri-operative period	32	32 (100%)	Questionnaire completed by all.
Ruppin	Longitudinal Controlled	The number in the available patient pool was not specified. 140 received recruitment letters. 69 were excluded	71	69 (97.2%)	The SCL-90, BSRI, FPI-R, & IPP tests were not completed by 9, 34, 13, & 16 respectively. Questions about romantic relationships, sexual relationships, friendships, & family relationships were not answered by 1, 3, 2, & 23 respectively. Questions regarding gender security & regret & were not answered by 1 & 2 respectively.
Smith	Longitudinal Controlled	The number in the available adult patient pool was not specified. 325 adult & adolescent applicants for SRS were recruited. 103 were excluded from additional tx	162	162 (100%)	36 to 61 (22.2%-37.6% of those adults w pre-SRS data) did not complete various post-SRS tests.
Udeze Megeri	Longitudinal Controlled	International patient w GD 546 & post SRS 318. 40 M to F subjects were prospectively selected.	40	40 (100%)	-
Ainsworth	Internet/convention Survey Cross-sectional Controlled	Number of incomplete questionnaires not reported	247	72 (29.1%) 75 (30.6%) facial 147 (59.5%) had received neither facial nor reassignment surgery	-
Beatrice	Cross-sectional Controlled	14 excluded for demographic matching reasons	40	10 (25%)	The assessments were completed by all
Haraldsen	Cross-sectional Controlled	Recruitment pool: 99	86	59 (68.6%)	-
Kraemer	Cross-sectional Controlled	The number in the available patient pool was not specified.	45	22 (48.9%)	-
Kuhn	Cross-sectional Controlled	The number in the available patient pool was not specified.	75	55 (73.3%)	-

Mate-Kole 1988	Cross-sectional Controlled	150 in 3 cohorts. Matched on select traits. The number in the available patient pool was not specified.	150	50 (66.7%)	-
Wolfradt	Cross-sectional Controlled	The number in the available patient pool was not specified.	90	30 (33.3%)	-

**Panel B (Surgical Series: No Concurrent Controls)**

Author	Study Type	Recruitment Pool	Enrolled	% GRS	Completion
Blanchard et al.	Cross-sectional Control: Normative test data	294 clinic patients w GD had completed study questionnaire 116 authorized for GRS. 103 completed GRS & 1 yr post-operative. 24 excluded	79	79(100%)	-
Weyers et al.	Cross-sectional Control: Normative test data	>300 M to F patients had undergone GRS 70 eligible patients recruited 20 excluded	50	50 (100%)	SF-26 not completed by 1
Wierckx et al.	Cross-sectional except for recall questions Control: Normative test data	79 F to M patients had undergone GRS & were recruited.  3 additional non-clinic patients were recruited by other patients. 32 excluded initially; 1 later.	49	49 (100%)	SF-36 test not completed by 2. Questions regarding sexual re-lationship, sex function, & surgical satisfaction were answered by as few as 27, 28, 32 respectively.
Eldh et al.	Cross-sectional except for 1 variable Control: Self for 1 variable-employ- ment	136 were identified. 46 excluded	90	90 (100%)	Questions regarding gender iden-tity, sex life, acceptance, & overall satisfaction were not answered by 13, 14, 14 & 16 respectively. Employment data missing for 11.
Hess et al.	Cross-sectional  No control	254 consecutive eligible patients post GRS identified & sent surveys. 135 excluded.	119	119 (100%)	Questions regarding the esthetics, functional, and social outcomes of GRS were not answered by 16 to 28 patients.
Lawrence	Cross-sectional No control	727 eligible patients were recruited. 495 were excluded	232	232 (100%)	-
Salvador et al.	Cross-sectional No control	243 had enrolled in the clinic 82 completed GRS 69 eligible patients were identified. 17 excluded.	52	52 (100%)	-
Tsoi	Cross-sectional No control	The number in the available patient pool was not specified.	81	81 (100%)	-

**Panel C (Mixed Treatment Series: No Direct Control Groups)**

Author	Study Type	Recruitment Pool	Enrolled	% GRS	Completion
--------	------------	------------------	----------	-------	------------

Gómez-Gil et al. 2012	Cross-sectional No direct control: Analysis of variance	200 consecutive patients were recruited. 13 declined participation or were excluded for incomplete questionnaires.	187	79 (42.2%)	See prior box.
Hepp et al.	Cross-sectional No direct control: Analysis of variance	The number in the available patient pool was not specified.	31	7 (22.6%)	HADS test not completed by 1
Motmans et al.	Cross-sectional No direct control: Analysis of variance & regression	255 with GD were identified. 77 were excluded.	148 (→140)	Not clearly stated. At least 103 underwent some form of GRS.	8 later excluded for incomplete SF-36 tests. 37 w recent GRS or hormone initiation were excluded from analysis of SF-36 results→103.
Newfield et al.	Internet survey Cross-sectional No direct control: Analysis of variance	Number of incomplete questionnaires not reported 446 respondents; 384 U.S respondents 62 non-U.S. respondents excluded from SF-36 test results 8 U.S. respondents excluded	376 (U.S.)	139 to 150 (37.0-39.9%) in U.S.	-
Gomez-Gil et al. 2014	Cross-sectional No direct control: Analysis w regression	The number in the available patient pool was not specified. 277 were recruited. 25 excluded	252(→193)	80 (41.4%) non-genital surgery	59 were excluded for incomplete questionnaires. See prior box.
Asscherman	Longitudinal No analysis by tx status	The number in the available patient pool was not specified.	1331	1177 (88.4%)	-
Johansson et al.	Cross-sectional except for 1 variable No analysis by tx status except for 1 question	60 eligible patients 18 excluded.	42	32 (76.2% of enrolled & 53.3% of eligible) (genital surgery)	-
Leinung et al.	Cross-sectional No analysis by tx status	242 total clinic patients	242	91 (37.6%)	Employment status data missing for 81 of all patients

\*Data obtained via a survey on a website and distributed at a conference

B/C=because

BSRI=Bem Sex Role Inventory

F=Female

FP-R=Freiberg Personality Inventory

GD=Gender dysphoria

GID=Gender identity disorder

HADS=Hospital Anxiety & Depression Scale

IPP=Inventory of Interpersonal Problems

M=Male

NA=Not applicable

SCL-90=Symptom Checklist-90

SF-36=Short Form 36

GRS=Sex reassignment surgery

Tx=Treatment

W/o=without

## Appendix D

## Demographic Features of Study Populations

## Panel A (Controlled Studies)

Author	Age (years; mean, S.D., range)	Gender	Race
Ainsworth	Only reassignment surgery: 50 (no S.D.) Only facial surgery: 51 (no S.D.) Both types of surgery: 49 (no S.D.) Neither surgery: 46 (no S.D.)	247 M to F	-
Beatrice	Pre-SRS M to F: 32.5 (27-42), Post-SRS: 35.1 (30-43)	20 M to F plus 20 M controls	100% Caucasian
Dehjne 2011	Post-SRS: all 35.1±9.7 (20-69), F to M 33.3±8.7 (20-62), M to F 36.3± 10.1(21-69)	133 (41.0%) F to M, 191 (59.0%) M to F; ratio 1:1.4	-
Dhejne 2014 Landén	F to M SRS cohort: median age 27 M to F SRS cohort: median age 32 F to M applicants for reversal: median age 22 M to F applicants for reversal: median age 35	767 applicants for legal/surgical reassignment- 289 (37.7%) F to M, 478 (62.3%) M to F; ratio 1:1.6 681 post SRS & legal change 252 (37.0%) F to M, 429 (63.0%) M to F; ratio 1:1.7 15 applicants for reversal 5 (33.3%) F to M, 10 (66.7%) M to F; ratio 1:2	-
Haraldsen	Pre-SRS & Post-SRS: F to M 34±9.5, F to M 33.3±10.0 Post-SRS cohort reportedly older. No direct data provided.	Pre & Post SRS 35 (40.7%) F to M, 51 (59.3%) M to F; ratio 1:1.5	-
Heylens	-	11 (19.3% of 57) F to M, 46 (80.7%); ratio 1:4.2 (80.7% underwent surgery)	-
Kockott	Pre-SRS (continued wish for surgery): 31.7±10.2 Post-SRS: 35.5±13.1	Pre-SRS (continued wish for surgery) 3 (25%) F to M, 9 (75%) M to F; ratio 1:3 Post SRS: 14 (43.8%) F to M, 18 (56.2%) M to F; ratio 1:1.3	-
Kraemer	Pre-SRS: 33.0±11.3, Post-SRS: 38.2±9.0	Pre-SRS 7 F to M (30.4%), 16 M to F (69.6%); ratio 1:2.3 Post-SRS 8 F to M (36.4%), 14 M to F (63.6%); ratio 1:1.8	-
Kuhn	All post SRS: median (range): 51 ( 39-62) (long-term follow-up)	3 (5.4%) F to M, 52 (94.5%) M to F; ratio 1:17.3.	-
Mate-Kole 1988	Initial evaluation: 34, Pre-SRS: 35, Post-SRS: 37	150 M to F	-
Mate-Kole 1990	Early & Usual wait SRS: 32.5 years (21-53)	40 M to F	-
Meyer	Pre-SRS: 26.7 Delayed, but completed SRS: 30.9 Post-SRS: 30.1	Pre-SRS: 5 (23.8%) F to M, 16 (76.2%) M to F; ratio 1:3.2 Delayed, but completed SRS: 1 (7.1%) F to M, 13 (92.9%) M to F; ratio 1:13 Post-SRS: 4 (26.7%) F to M, 11 (73.3%) M to F; ratio 1:2.8	86% Caucasian

Rakic	All: 26.8±6.9 (median 25.5, range 19-47), F to M: 27.8±5.2 (median 27, range 23-37), M to F: 26.4±7.8 (median 24, range 19-47).	10 (31.2%) F to M, 22 (68.8%) M to F; ratio 1:2.2	-
Ruppin	All: 47.0±10.42 (but 2 w/o SRS) (13.8±2.8 yrs post legal name change) (long-term follow-up) F to M: 41.2±5.78, M to F 52.9±10.82	36 (50.7%) F to M, 35 (49.3%) M to F; ratio 1:0.97	-
Smith	Time of surgical request for post-SRS: 30.9 (range 17.7- 68.1) Time of follow-up for post-SRS: 35.2 (range 21.3-71.9)	Pre-SRS: 162: 58 (35.8%) F to M, 104 [64.2%] M to F; ratio 1:1.8 Post-SRS: 126: 49 (38.9%) F to M, 77 (61.1%) M to F; ratio 1:1.6	-
Udeze Megeri	M to F: 47.33±13.26 (range 25-80).	40 M to F	-
Wolfradt	Patients & controls: 43 (range 29-67).	30 M to F plus 30 F controls plus 30 M controls.	-

\*Data obtained via a survey on a website and distributed at a conference SD=Standard deviation

**Panel B (Surgical Series: No Concurrent Controls)**

Author	Age (years; mean, S.D., range)	Gender	Caucasian
Blanchard et al.	F to M: 32.6, M to F w M partner preference: 33.2, F to M w F partner preference: 47.7 years	Post-GRS: 47 (45.6%) F to M, 56 (54.4%) M to F; ratio 1:1.19. In study: 38 (48.1%) F to M, 32 (40.5%) M to F w M partner preference, 9 (11.4%) M to F w F partner preference; ratio 1:0.8: 0.2	-
Weyers et al.	Post-GRS M to F: 43.1 ±10.4 (long-term follow-up)	50 M to F	-
Wierckx et al.	Time of GRS: 30±8.2 years (range 16 to 49) Time of follow-up: 37.1 ±8.2.4 years (range 22 to 54)	49 M to F	-
Eldh et al.	-	50 (55.6%) F to M, 40 (44.4%) M to F; ratio 1:0.8 There is 1 inconsistency in the text suggesting that these should be reversed.	-
Hess et al.	-	119 M to F	-
Lawrence	Time of GRS: 44±9 (range 18-70)	232 M to F	-
Salvador et al.	Time of follow-up for post-GRS: 36.28±8.94 (range 18-58) (Duration of follow-up: 3.8±1.7 [2-7])	52 M to F	-
Tsoi	Time of initial visit: All: 24.0±4.5, F to M: 25.4±4.4 (14- 36), M to F: 22.9±4.6 (14-36). Time of GRS: All: 25.9±4.14, F to M: 27.4±4.0 (20-36), M to F: 24.7±4.3 (20-36).	36 (44.4%) F to M, 45 (55.6%) M to F; ratio 1:1.25	0% 100% Asian

**Panel C (Mixed Treatment Series: No Direct Control Groups)**

Author	Age (years; mean, S.D., range)	Gender	Caucasian
Gómez-Gil et al. 2012	W & W/O GRS: All: 29.87±9.15 (range 15-61), W/O hormone tx: 25.9±7.5, W current hormone tx: 33.6±9.1. (At hormone initiation: 24.6±8.1).	W/O hormone tx: 38 (56.7%) F to M, 29 (43.3%) M to F; ratio 1:0.8. W hormone tx: 36 (30.0%) F to M, 84 (70.0%) M to F; ratio 1:2.3. Post-GRS: 29 (36.7%) F to M, 50 (63.3%) M to F; ratio 1:1.7.	-
Hepp et al.	W & W/O GRS: 32.2±10.3	W & W/O GRS: 11 (35.5%) F to M; 20 (64.5%) M to F; ratio 1:1.8.	-

Motmans et al.	W & W/O GRS: All (n=140) : 39.9±10.2, F to M: 37.0±8.5, M to F: 42.3±10.4	W & W/O GRS: N=140 63(45.0%) F to M, 77 (55.0%) M to F; ratio 1:1.2 N=103 49 (47.6%) F to M; 54 (52.4%) M to F; ratio 1:1.1	-
Newfield et al.	W & W/O GRS: U.S.+ non-U.S. : 32.8±11.2, U.S. 32.6±10.8	W & W/O GRS: U.S.+ non-U.S.: F to M, 438, U.S.: F to M: 376	89% of 336 respondents Caucasian
Gomez-Gil, et al. 2014	W & W/O Non-genital GRS: 31.2±9.9 (range 16-67).	W & W/O Non-genital GRS: 74 (38.3%) F to M, 119 (61.7%) M to F; ratio 1:1.6.	-
Asscherman	Time of hormone tx: F to M: 26.1±7.6 (16-56), M to F: 31.4±11.4 (16-76)	Met hormone tx requirements: 365 (27.4%) F to M, 966 (72.6%) M to F; ratio 1:2.6. Post-GRS: 343 (29.1%) F to M, 834 (70.9%) M to F; ratio 1:2.4.	-
Johanssen	Time of initial evaluation: F to M: 27.8 (18-46), M to F 37.3 (21-60). Time of GRS: F to M: 31.4 (22-49), M to F 38.2 (22-57). Time of follow-up for post-GRS: F to M: 38.9 (28-53), M to F 46.0 (25-69) (Long-term follow-up)	Approved for GRS: 21 (35%) F to M, 39 (65%) M to F; ratio 1:1.9) Post GRS: 14 (43.8%) F to M; 18 (56.2%) M to F; ratio 1:1.3)	-
Leinung et al.	Time of hormone initiation : F to M: 27.5, M to F 35.5	W & W/O GRS: 50 (20.7%) F to M, 192 M to F (79.3%); ratio 1:3.8. Post-GRS: 32 F to M (35.2%); 59 (64.8%) M to F; ratio 1:1.8.	-

## Appendix E

### Psychometric and Satisfaction Survey Instruments

Instrument Name and Developer	Development and Validation Information
<b>APGAR Family Adaptability, Partnership Growth, Affection, and Resolve</b> <i>Smilkstein</i>	Published in 1978 Initial data: 152 families in the U.S. A "friends" component was added in 1983. Utility has challenged by many including Gardner 2001
<b>Beck Depression Inventory</b> <i>Beck, Ward, Mendelson, Mock, &amp; Erbaugh</i>	Published initially in 1961 with subsequent revisions It was initially evaluated in psychiatric patients in the U.S.A. Salkind (1969) evaluated its use in 80 general outpatients in the UK. It is copyrighted and requires a fee for use
<b>Bem Sex Role Inventory</b> <i>Bem</i>	Published 1974 Initial data: 100 Stanford Undergraduates 1973 update: male 444; female 279 1978 update: 470; female 340
<b>Body Image Questionnaire</b> <i>Clement &amp; Lowe</i>	Validity study published 1996 (German) Population: 405 psychosomatic patients, 141 medical students, 208 sports students
<b>Body Image Scale</b> <i>Lindgren &amp; Pauly (Kuiper, Dutch adaptation 1991)</i>	1975 Initial data: 16 male and 16 female transsexual patients in Oregon

<b>Crown Crisp Experiential Index</b> (formerly Middlesex Hospital Questionnaire) <i>Crown &amp; Crisp</i>	Developed circa 1966 Manual published 1970 Initial data: 52 nursing students while in class in the UK
<b>(2<sup>nd</sup>) European Quality of Life Survey</b> <i>Anderson, Mikulić, Vermeylen, Lyly-Yrjanainen, &amp; Zigante,</i>	Published in 2007 The pilot survey was tested in the UK and Holland with 200 interviews. The survey was revised especially for non-response questions. Another version was tested in 25 persons of each of the 31 countries to be surveyed. Sampling methods were devised. 35,634 Europeans were ultimately surveyed. Additional updates
<b>Female Sexual Function Index</b> <i>Rosen, Brown, Heiman, Leiblum, Meston, Shabsigh, Ferguson, D'Agostino Wiegel, Meston, &amp; Rosen</i>	Published in 2000 Initial data: 131 normal controls & 128 age-matched subjects with female sexual arousal disorder from 5 U.S. research centers. Updated 2005: the addition of those with hypoactive sexual desire disorder, female sexual orgasm disorder, dyspareunia/vaginismus, & multiple sexual dysfunctions (n=568), plus more controls (n=261).
<b>Fragebogen zur Beurteilung des eigenen Körpers</b> <i>Strauss</i>	Published 1996 (German)
<b>Freiberg Personality Inventory</b> <i>Fahrenberg, Hampel, &amp; Selg</i>	7 <sup>th</sup> edition published 2001, 8 <sup>th</sup> edition in 2009 (Not in PubMed) German equivalent of MMPI
<b>"gender identity disorder in childhood"</b> <i>Smith, van Goozen, Kuiper, &amp; Cohen-Kettenis</i>	11 items derived from the Biographical Questionnaire for Trans-sexuals (Verschoor Poortinga 1988) (Modified by authors of the Smith study)
<b>Gender Identity Trait Scale</b> <i>Altstotter-Gleich</i>	Published 1989 (German)
<b>General Health Questionnaire</b> <i>Goldberg &amp; Blackwell (initial study)</i> <i>Goldberg &amp; Williams (manual)</i>	Initial publication 1970 Manual published ?1978, 1988 (Not in PubMed) Initial data: 553 consecutive adult patients in a single UK primary care practice were assessed. Sample of 200 underwent standardized psychiatric interview. Developed to screen for hidden psychological morbidity. Proprietary test. Now 4 versions.
<b>Hospital Anxiety &amp; Depression Scale</b> <i>Zigmond &amp; Snaith</i>	Published in 1983 Initial data: Patients between 16 & 65 in outpatient clinics in the UK >100 patients; 2 refusals. 1 <sup>st</sup> 50 compared to 2 <sup>nd</sup> 50.
<b>Inventory of Interpersonal Problems</b> <i>Horowitz</i>	Published 1988 Initial data: 103 patients about to undergo psychotherapy; some patients post psycho-therapy (Kaiser Permanente-San Francisco) Proprietary test

<b>King's Health Questionnaire</b> <i>Kelleher, Cardozo, Khullar, &amp; Salvatore</i>	1997 Initial data: 293 consecutive women referred for urinary incontinence evaluation in London Comparison to SF-36
<b>Minnesota Multi-phasic Personality Inventory</b> <i>Hathaway &amp; McKinley</i> <i>Butcher, Dahlstrom, Graham, &amp; Tellegen</i>	Published in 1941 Updated in 1989 with new, larger, more diverse sample. MMPI-2: 1,138 men & 462 women from diverse communities & several geographic regions in the U.S.A. The test is copyrighted.
<b>Modified Androphilia-Gynephilia Index</b>	Neither the underlying version or the Blanchard modified version could be located in PubMed (Designed by the author of the Blanchard et al. study)
<b>"post-operative functioning 13 items"</b> <i>Doorn, Kuiper, Verschoor, Cohen-Kettenis</i>	Published 1996 (Dutch) (Not in PubMed) (Designed by 1 of the authors of the Smith study)
<b>"post-operative functioning 21 items"</b> <i>Doorn, Kuiper, Verschoor, Cohen-Kettenis</i>	Published 1996 (Dutch) (Not in PubMed) (Designed by 1 of the authors of the Smith study)
<b>Scale for Depersonalization Experiences</b> <i>Wolfradt</i>	Unpublished manuscript 1998 (University of Halle) (Designed by 1 of the authors of the Wolfradt study)
<b>"sex trait function"</b> <i>Cohen-Kettenis &amp; van Goozen</i>	Published 1997 Assessed in 22 adolescents (Designed by 1 of the authors of the Smith Study)
<b>Self-Esteem Scale</b> <i>Rosenberg</i>	Published 1965 (Not in PubMed) Initial data: 5,024 high-school juniors & seniors from 10 randomly selected New York schools
<b>Short-Form 36</b> <i>RAND</i> <i>Ware &amp; Sherbourne 1992</i> <i>McHorney, Ware, &amp; Raczek 1993</i>	Originally derived from the Rand Medical Outcomes Study (n=2471 in version 1; 6742 in version 2 1989). The earliest test version is free. Alternative scoring has been developed. There is a commercial version with a manual.
<b>Social Anxiety &amp; Distress Scale</b> <i>Watson &amp; Friend</i>	Initial publication in 1969 Requires permission for use
<b>Social Support Scale</b> <i>Van Tilburg 1988</i>	Published 1988 (Dutch) (Not in PubMed)
<b>Spielberger State &amp; Trait Anxiety Questionnaire</b> <i>Spielberger, Gorsuch, Lushene, Vagg, &amp; Jacobs</i>	Current format published in 1983 Proprietary test



<b>Symptom Checklist-90</b> <i>Derogatis, Lipman, Covi</i> <i>Derogatis &amp; Cleary</i>	Published in 1973 & 1977 Reportedly with normative data for psychiatric patients (in- & out-patient) & normal subjects in the U.S. Has undergone a revision Requires qualification for use
<b>Tennessee Self-Concept Scale</b> <i>Fitts &amp; Warren</i>	In use prior to 1988 publication. Initial data: 131 psychiatric day care patients. Updated manual published 1996. Update population >3000 with age stratification. No other information available. Requires qualification for use
<b>Utrecht Gender Dysphoria Scale</b> <i>Cohen-Kettenis &amp; van Goozen</i>	Published in 1997 Initial population: 22 transgender adolescents who underwent reassignment surgery. (Designed by 1 of the authors of the Smith study)
<b>WHO-Quality of Life</b> (abbreviated version) <i>Harper for WHO group</i>	Field trial version released 1996 Tested in multiple countries. The Seattle site consisted of 192 of the 8294 subjects tested). Population not otherwise described. The minimal clinically important difference has not been determined. Permission required

Althof et al., 1983; Greenberg, Frank, 1965; Gurtman, 1996; Lang, Vernon, 1977; Paap et al., 2012; Salkind et al., 1969; Vacchiano, Strauss, 1968.

## Appendix F

### Endpoint Data Types and Sources

#### Panel A (Controlled Studies)

Author	National Data	Instrument w Substantive Normative Data	Instrument w/o Substantive &/or Accessible Normative Data	Investigator-designed	Other	Other
Dhejne 2011	Yes	-	-	-	-	Mortality (Suicide, Cardiovascular Disease [possible adverse events from Hormone Tx], Cancer), Psych hx & hospitalization, Suicide attempts
Dhejne Landén	Yes	-	-	-	Includes demographics*	Education, Employment, Formal application for reversal of status, Psych dx & tx, Substance abuse** More elements in earlier paper
Beatrice	-	MMPI form R, TSCS	-	-	Demographic	Education, Income, Relationships
Haraldsen	-	SCL-90/90R	-	-	Demographic	DSM Axis 1, II, V (GAF), Substance abuse
Heylens	-	SCL-90	-	Yes-2	Demographic	Employment, Relationships, Substance abuse, Suicide attempts
Ainsworth	-	Likely SF-36v2*	-	Yes-1	Demographic	-
Ruppin	-	SCL-90R	BSRI, FPI-R, IIP	Yes-2	Demographic	Adverse events from surgery, Employment, Psych tx, Relationships, Substance abuse

Smith	-	MMPI-short, SCL-90?R	BIS, UGDS, ? Cohen-Kettenis', Doorn's x2, (Gid-c, SSS)	Yes-1 or 2	Demographic	Adverse events from surgery, Employment, Relationships
Udeze Megeri	-	SCL-90R	BDI, GHQ, HADS, STAI-X1, STAI-X2	-	-	Psych eval & ICD-10 dx
Kuhn	-	-	KHQ	Yes-1	Demographic	Relationships
Mate-Kole 1990	-	-	BSRI, CCEI	Yes-1	Demographic	Employment (relative change), Psych hx, Suicide hx
Wolfradt	-	-	BIQ, GITS, SDE, SES	Yes-1	-	-
Kraemer	-	-	FBeK	-	Demographic	-
Mate-Kole 1988	-	-	BSRI, CCEI	-	Demographic	Employment, Psych hx, Suicide hx,
Kockott	-	-	-	Yes-1	Demographic	Employment, Income, Relationships, Suicide attempts
Meyer	-	-	-	Yes-1	Demographic	Education, Employment, Income, Psych tx, Phallus removal request
Rakic	-	-	-	Yes-1	Demographic	Employment, Relationships

## Panel B (Surgical Series: No Concurrent Controls)

Author	National Data	Instrument w Substantive Normative Data	Instrument w/o Sub-stantive &/or Accessible Normative Data	Investigator-designed	Other	Other
Weyers	-	SF-36	FSFI	Yes-2	Demographic	Hormone levels, Adverse events from surgery, Relationships
Blanchard	-	SCL-90R	(AG)	Yes-1	Demographic	Education, Employment, Income, Relationships, Suicide (Incidental finding)
Wierckx	-	SF-36	-	Yes-3	Demographic	Hormone levels, Adverse events from surgery, Relationships
Eldh	-	-	-	Yes-1	-	Adverse events from surgery, Employment, Relationships, Suicide attempts
Hess	-	-	-	Yes-1	-	-
Lawrence	-	-	-	Yes-4	Demographic	Adverse events from surgery
Salvador	-	-	-	Yes-1	Demographic	Relationships
Tsoi	-	-	-	Yes-1	Demographic	Education, Employment, Relationships (relative change)

## Panel C (Mixed Treatment Series: No Direct Control Groups)

Author	National Data	Instrument w Substantive Normative Data	Instrument w/o Sub-stantive &/or Accessible Normative Data	Investigator-designed	Other	Other
Asscheman et al.	Yes	-	-	-	Demographic	Mortality (HIV, Possible adverse events from Hormone Tx, Substance abuse, Suicide)

Motmans et al.	-	SF36 EQOLS (2 <sup>nd</sup> )	-	-	Demographic	Education, Employment, Income, Relationships
Newfield et al.	-	SF-36v2	-	-	Demographic	Income
Gómez-Gil et al. 2014	-	WHOQOL-BREF	APGAR	Yes-1	Demographic	Education, Employment, Relationships
Gómez-Gil et al. 2012	-	-	HADS, SADS	-	Demographic	Education, Employment, Living arrangements
Hepp et al.	-	-	HADS	-	Demographic	DSM Axis 1& II Psych dx
Johansson et al.	-	-	-	Yes-1	Demographic	Axis V change (Pt & Clinician) Employment (relative change) Relationship (relative change)
Leinung et al.	-	-	-	-	Demographic	Employment, Disability, DVT, HIV status, Psych dx

\*Listed as San Francisco-36 in manuscript

\*\* From medical charts & verdicts ?=Possibly self-designed

AG=Androphilia-Gynephilia Index (investigator designed 1985) (used more for classification)

APGAR=Family Adaptability, Partnership growth, Affection, and Resolve

BDI=Beck Depression Inventory

BIQ=Body Image Questionnaire

BIS=Body Image Scale

BSRI=Bem Sex Role Inventory

CCEI=Crown Crisp Experiential Index

Cohen-Kettenis'= Sex trait function (An author helped design)

Dorn's x2= Post-operative functioning 13 items (An author helped design)

Post-operative functioning 21 items (An author helped design)

EQOLS (2nd)=2nd European Quality of Life Survey

FBeK=Fragebogen zur Beurteilung des eigenen Körpers

FPI-R=A version of the Freiberg Personality Inventory

FSFI+Female Sexual Function Index

GHQ=General Health Questionnaire

Gid-c=Gender identity disorder in childhood (used more for predictors) (An author helped design)

GITS=Gender Identity Trait Scale

HADS=Hospital Anxiety Depression Scale

IIP=Inventory of Interpersonal Problems

KHQ=King's Health Questionnaire

MMPI=Minnesota Multi-phasic Personality Inventory

SADS=Social Anxiety & Distress Scale

SCL-90 (±R)=A version of the Symptom Checklist 90

SDE=Scale for Depersonalized Experiences (An author designed)

SES=Self-Esteem Scale

SF-36 (v2)=Short Form-36(version2)

SSS=Social Support Scale (used more for predictors)

STAI-X1, STAI-X2=Spielberger State and Trait Anxiety Questionnaire

TSCS=Tennessee Self-Concept Scale

UGDS=Utrecht Gender Dysphoria Scale (An author helped design)

WHOQOL-BREF=World Health Organization-Quality of Life (abbreviated version)

## Appendix G.

### Longitudinal Studies Which Used Patients as Their Own Controls and Which Used Psychometric Tests with Extensive Normative Data or Longitudinal Studies Which Used National Data Sets

Author	Test	Patient and Data Loss	Results
	Psychometric Test		

Heylens et al. Belgium 2014	SCL-90R	<p>90 applicants for SRS were recruited.</p> <ul style="list-style-type: none"> <li>• 8 (8.9%) declined participation.</li> <li>• 12 (13.3%) excluded b/c GID-NOS dx.</li> <li>• 12 (13.3%) did not complete the treatment sequence b/c of psychiatric/physical co-morbidity, personal decision for no tx, or personal decision for only hormone tx.</li> <li>• 1 (1.1%) committed suicide during follow-up.</li> </ul> <p>57 (63.3% of recruited) entered the study.</p> <ul style="list-style-type: none"> <li>• 1 (12.2% of initial recruits) had not yet received SRS by study close.</li> </ul> <p>→<b>46 (51.1% of recruited) underwent serial evaluation</b></p> <ul style="list-style-type: none"> <li>• The test was not completed by 1 at t=0, 10 at t=1 (after hormone tx), &amp; 4 at t=2 (after SRS)</li> </ul> <p>→<b>missing data for another 1.1% to 11.1%.</b></p>	<p>At t=0, the mean global “psychoneuroticism” SCL-90R score, along with scores of 7 of 8 subscales, were statistically more pathologic than the general population.</p> <p>After hormone tx, the mean score for global “psychoneuroticism” normalized &amp; remained normal after reassignment surgery.</p>
-----------------------------------	---------	---	--

Ruppin, Pfafflin, Germany 2015	SCL-90R	<p>The number in the available patient pool was not specified. 140 received recruitment letters.</p> <ul style="list-style-type: none"> <li>• 2 (1.4% of those with recruitment letters) had died.</li> <li>• 1 (0.7%) was institutionalized.</li> <li>• 5 (3.6%) were ill.</li> <li>• 8 (5.7%) did not have time.</li> <li>• 8 (5.7%) stated that GD was no longer an issue.</li> <li>• 8 (5.7%) provided no reason.</li> <li>• 28 (20.0%) declined further contact.</li> <li>• 9 (6.4%) were lost to follow-up.</li> </ul> <p>→ <b>71 (50.7%) agreed to participate.</b></p> <ul style="list-style-type: none"> <li>• <b>2 (1.4%) had not undergone SRS</b></li> <li>• The test was not completed by 9.</li> </ul> <p>→ <b>missing data for another 6.4%.</b></p>	<p>At t=0, the "global severity index" "SCL-90R score was <math>0.53 \pm 0.49</math>. At post-SRS follow-up the score had decreased to <math>0.28 \pm 0.36</math>.</p> <p>The scores were statistically different from one another, but are of limited biologic significance given the range of the score for this scale: 0-4.</p> <p>In the same way, all of the subscale scores were statistically different, but the effect size was reported as large only for "interpersonal sensitivity": <math>0.70 \pm 0.67</math> at t=0 and <math>0.26 \pm 0.34</math> post-SRS.</p>
Smith et al. Holland 2005	MMPI SCL-90	<p>The number in the available adult patient pool was not specified. 325 adult &amp; adolescent applicants for SRS were recruited.</p> <ul style="list-style-type: none"> <li>• 103 (31.7%) were not eligible to start hormone tx &amp; real-life experience.</li> <li>• 34 (10.7%) discontinued hormone tx</li> </ul> <p>162 (an unknown percentage of the initial recruitment) provided pre-SRS test data.</p> <ul style="list-style-type: none"> <li>• <b>36 to 61 (22.2%-37.6% of those adults w pre-SRS data) did not complete post-SRS testing.</b></li> </ul>	<p>Most of the MMPI scales were already in the normal range at the time of initial testing.</p> <p>At t=0, the global "psychoneuroticism" SCL-90 score, which included the drop-outs, was <math>143.0 \pm 40.7</math>.</p> <p>At post SRS-follow-up, the score had decreased to <math>120.3 \pm 31.4</math>.</p> <p>The scores were statistically different from one another, but are of limited biologic significance given the range of the score for this scale: 90 to 450, with higher scores consistent with more psychological instability.</p>

Udeze, et al. 2008 Megeri, Khoosal 2007 UK	SCL- 90R	The number in the available patient pool was not specified. 40 subjects were prospectively selected. • Post-operative testing was conducted within 6 months to minimize previously determined loss rates.	At t=0, the mean raw global score was 48.33. At post-SRS follow-up, the mean score was 49.15.  There were no statistically significant changes in the global score or for any of the subscales.
<b>National Databases</b>			
Dehjne Sweden 2011	Swedish National Records	804 with GID in Sweden 1973 to 2003 were identified. • 480 (59.7%) did not apply or were not approved for SRS 324 (40.3%) underwent SRS. • All were followed.  3240 controls of the natal sex and 3240 controls of the reassigned gender were randomly selected from national records	All cause mortality was higher (n=27[8%]) than in controls (H.R 2.8 [1.8-4.3]) even after adjustment for covariants. Divergence in survival curves was observed after 10 years. The major contributor was completed suicide (n=10 [3%]; adjusted H.R. 19.1 [5.8-62.9]).  Suicide attempts were more common ( n=29 [9%]) than in controls (adjusted H.R. 4.9 [2.9–8.5]).  Hospitalizations for psychiatric conditions (not related to gender dysphoria) were more common n= 64 [20%] than in controls (H.R. 2.8 [2.0–3.9]) even after adjusting for prior psychiatric morbidity.
Dhejne et al. 2014 Landén et al. 1998 Sweden	Swedish National Registry	767 applied for SRS/legal status (1960-2010) • 25 (3.3%) applications denied. • 61 (8.0%) not granted full legal status 681 (88.7%) underwent SRS. • All were followed.	15 formal applications for reversal to natal/original gender (2.2% of the SRS population) were identified thus far (preliminary number). (Does not reflect other manifestations of regret such as suicide.)

GID-NOS=Gender Identity Disorder-Not Otherwise Specified HR=Hazard Ratio SRS=Sex reassignment surgery  
Tx=Treatment

## Bibliography

ACA 2010: Patient Protection and Affordable Care Act, Pub. L. No. 111 -148, §3502, 124 Stat. 119, 124 (2010).

Ahmed SF, Morrison S, Hughes IA. Intersex and gender assignment; the third way? *Arch Dis Child*. 2004 Sep;89(9):847-50. PMID:> 15321864.

Ainsworth T, Spiegel J. Quality of life of individuals with and without facial feminization surgery or gender reassignment surgery. *Qual Life Res*. 2010 Sep;19(7):1019-24. Epub 2010 May 12. PMID: 20461468.

Altstotter-Gleich, C. (1989). *Theoriegeleitete Itemkonstruktion und -auswahl: Eine Modifikation des Einsatzes der Repertory-Grid-Technik dargestellt am Beispiel der Erfassung der Geschlechtsidentität* [Theory oriented item construction and selection: A modification of the use of the Repertory-Grid- Technique as shown at the exemple of the

assessment of gender identity], Verlag fur empirische Padagogik, Landau. German. (Not in PubMed)

Althof SE, Lothstein LM, Jones P, Shen J. An MMPI subscale (Gd): to identify males with gender identity conflicts. *J Pers Assess*. 1983 Feb;47(1):42-9. PMID: 6834232.

American College of Obstetricians and Gynecologists (ACOG). Committee on Health Care for Underserved Women. Committee Opinion No. 512: Health care for transgender individuals. *Obstet Gynecol*. 2011 Dec;118(6):1454-8.

American Medical Association House of Delegates resolution 122 (A-08) proposal *Removing Financial Barriers to Care for Transgender Patients*. 2008.

American Psychological Association (APA). Guidelines for Psychological Practice with Transgender and Gender Nonconforming People. *American Psychologist*. 2015: Adopted by the Council of Representatives, August 5& 7, 2015. [www.apa.org/practice/guidelines/transgender.pdf](http://www.apa.org/practice/guidelines/transgender.pdf) (publication pending).

Antoszewski B, Bratoś R, Sitek A, Fijałkowska M. Long-term results of breast reduction in female-to- male transsexuals. *Pol Przegl Chir*. 2012 Mar;84(3):144-51. PMID: 22659357.

Arcelus J, Bouman WP, Van Den Noortgate W, Claes L, Witcomb G, Fernandez-Aranda F. Systematic review and meta-analysis of prevalence studies in transsexualism. *Eur Psychiatry*. 2015 Sep;30(6):807-15. Epub 2015 May 26. PMID: 26021270.

Asscheman H, Gooren LJ, Eklund PL. Mortality and morbidity in transsexual patients with cross- gender hormone treatment. *Metabolism*. 1989 Sep;38(9):869-73. PMID: 2528051.

Asscheman H, Giltay EJ, Megens JA, de Ronde WP, van Trotsenburg MA, Gooren LJ. A long-term follow-up study of mortality in transsexuals receiving treatment with cross-sex hormones. *Eur J Endocrinol*. 2011 Apr;164(4):635-42. Epub 2011 Jan 25. PMID: 21266549.

Asscheman H, T'Sjoen G, Lemaire A, Mas M, Meriggiola M, Mueller A, Kuhn A, Dhejne C, Morel- Journeel N, Gooren L. Venous thrombo-embolism as a complication of cross-sex hormone treatment of male-to-female transsexual subjects: a review. *Andrologia*. 2014 Sep;46(7):791-5. Epub 2013 Aug 15. PMID: 23944849.

Atkins D, Best D, Briss PA, Eccles M, Falck-Ytter Y, Flottorp S, Guyatt GH, Harbour RT, Haugh MC, Henry D, Hill S, Jaeschke R, Leng G, Liberati A, Magrini N, Mason J, Middleton P, Mrukowicz J, O'Connell D, Oxman AD, Phillips B, Schünemann HJ, Edejer T, Varonen H, Vist GE, Williams JW Jr, Zaza S; GRADE Working Group. Grading quality of evidence and strength of recommendations. *BMJ*. 2004 June;328(19):1490-4. PMID: 15205295.

Auer M, Fuss J, Stalla G, Athanasoulia A. Twenty years of endocrinologic treatment in transsexualism: analyzing the role of chromosomal analysis and hormonal profiling in the diagnostic work-up. *Fertil Steril* 2013 Oct;100(4):1103-10. Epub 2013 Jun 27.

Auerbach JD. The iPrEx results: lifting hopes, raising questions. *BETA*. 2010 Summer-Fall;22 (4):47-9. PMID: 21591604.

Baba T, Endo T, Ikeda K, Shimizu A, Honnma H, Ikeda H, Masumori N, Ohmura T, Kiya T, Fujimoto T, Koizumi M, Saito T. Distinctive features of female-to-male transsexualism and prevalence of gender identity disorder in Japan. *J Sex Med*. 2011 Jun;8(6):1686-93. Epub 2011 Apr 7. PMID: 21477021.

Balshem H, Helfand M, Schünemann HJ, Oxman AD, Kunz R, Brozek J, Vist GE, Falck-Ytter Y, Meerpohl J, Norris S, Guyatt GH. GRADE guidelines: 3. Rating the quality of evidence. *J Clin Epidemiol*. 2011 Apr;64(4):401-6. Epub 2011 Jan 5. PMID: 21208779.

Bandini E, Fisher AD, Ricca V, Ristori J, Meriggiola MC, Jannini EA, Manieri C, Corona G, Monami M, Fanni E, Galleni A, Forti G, Mannucci E, Maggi M. Childhood maltreatment in subjects with male-to-female gender identity disorder. *Int J Impot Res*. 2011 Nov-Dec;23(6):276-85. Epub 2011 Aug 11. PMID: 21833007.

Bao AM, Swaab DF. Sexual differentiation of the human brain: relation to gender identity, sexual orientation and neuropsychiatric disorders. *Front Neuroendocrinol*. 2011 Apr;32(2):214-26. Epub 2011 Feb 18. PMID: 21334362.

Baral S, Poteat T, Strömdahl S, Wirtz A, Guadamuz T, Beyrer C. Worldwide burden of HIV in transgender women: a systematic review and meta-analysis. *Lancet Infect Dis*. 2013 Mar;13(3):214- 22. Epub 2012 Dec 21. PMID: 23260128.

Barlow DH, Abel GG, Blanchard EB. Gender identity change in transsexuals. Follow-up and replications. *Arch Gen Psychiatry*. 1979 Aug;36(9):1001-7. PMID: 464738.

Barrett J. (1998) *Psychological and social function before and after phalloplasty*. University of London. Institute of Psychiatry. Thesis (MSc). King's College London. Catalogue #000457428 or *IJT*. 1998; 2:1 or <http://gendertrust.org.uk/wp-content/uploads/2013/02/13-Psychological-and-Social-Function-Before-and-After-Phal..pdf>.

Barrington C, Wejnert C, Guardado ME, Nieto AI, Bailey GP. Social network characteristics and HIV vulnerability among transgender persons in San Salvador: identifying opportunities for HIV prevention strategies. *AIDS Behav*. 2012 Jan;16(1):214-24. PMID: 464738.

Bartlett NH, Vasey PL. A retrospective study of childhood gender-atypical behavior in Samoan fa'afafine. *Arch Sex Behav*. 2006 Dec;35(6):659-66. Epub 2006 Aug 15. PMID: 16909317.

Bartolucci C, Gómez-Gil E, Salamero M, Esteva I, Guillamón A, Zubiaurre L, Molero F, Montejo A. Sexual quality of life in gender-dysphoric adults before genital sex reassignment surgery. *J Sex Med*. 2015 Jan;12(1):180-8. Epub 2014 Nov 17. PMID: 25401972.

Baumeister S, Sohn M, Domke C, Exner K. [Phalloplasty in female-to-male transsexuals: experience from 259 cases]. *Handchir Mikrochir Plast Chir*. 2011 Aug;43(4):215-21. Epub 2011 Aug 11. PMID: 21837614.

Beatrice J. A psychological comparison of heterosexuals, transvestites, preoperative transsexuals, and postoperative transsexuals. *J Nerv Ment Dis*. 1985 Jun;173(6):358-65. PMID: 3998721.

Beck A, Ward C, Mendelson M, Mock J, Erbaugh J. An inventory for measuring depression. *Arch Gen Psychiatry*. 1961 Jun;4:561-71. PMID: 13688369.

Bentz EK, Hefler LA, Kaufmann U, Huber JC, Kolbus A, Tempfer CB. A polymorphism of the CYP17 gene related to sex steroid metabolism is associated with female-to-male but not male-to- female transsexualism. *Fertil Steril*. 2008 Jul;90(1):56-9. Epub 2007 Sep 4. PMID: 17765230.

Bentz EK, Pils D, Bilban M, Kaufmann U, Hefler LA, Reinthaller A, Singer CF, Huber JC, Horvat R, Tempfer CB. Gene expression signatures of breast tissue before and after cross-sex hormone therapy in female-to-male transsexuals. *Fertil Steril*. 2010 Dec;94(7):2688-96. Epub 2010 May 26. PMID: 20537635.

Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology*. 1974; 42:155-162. (Not in PubMed)

Berry MG, Curtis R, Davies D. Female-to-male transgender chest reconstruction: a large consecutive, single-surgeon experience. *J Plast Reconstr Aesthet Surg*. 2012 Jun;65(6):711-9. Epub 2011 Dec 19. PMID: 22189204.

Besnier, N. (1994). Polynesian gender liminality through time and space. In G.Herdt (Ed.), *Third> sex, third gender: Beyond sexual dimorphism in culture and history*. New York: Zone Books.

Birtchnell J, Evans C, Kennard J. The total score of the Crown-Crisp Experiential Index: a useful and valid measure of psychoneurotic pathology. *Br J Med Psychol*. 1988 Sep;61 (Pt 3):255-66. PMID: 3179248.

Bith-Melander P, Sheoran B, Sheth L, Bermudez C, Drone J, Wood W, Schroeder K. Understanding sociocultural and psychological factors affecting transgender people of color in San Francisco. *J Assoc Nurses AIDS Care*. 2010 May-Jun;21(3):207-20. PMID: 20416495.



- Bjerrome Ahlin H, Kölby L, Elander A, Selvaggi G. Improved results after implementation of the Ghent algorithm for subcutaneous mastectomy in female-to-male transsexuals. *J Plast Surg Hand Surg*. 2014 Dec;48(6):362-7. Epub 2014 Mar 11. PMID: 24611803.
- A-Blanchard R, Steiner BW, Clemmensen LH. Gender dysphoria, gender reorientation, and the clinical management of transsexualism. *J Consult Clin Psychol*. 1985 Jun;53(3):295-304. PMID: 4008715.
- B-Blanchard R. Typology of male-to-female transsexualism. *Arch Sex Behav*. 1985 Jun;14(3):247-61. PMID: 4004548.
- C-Blanchard RJ, Blanchard DC, Flannelly KJ. Social desirability response set and systematic distortion in the self-report of adult male gender patients. *Behav Processes*. 1985 Aug;11(2):209-13. doi: 10.1016/0376-6357(85)90062-2. PMID: 24895927.
- D-Blanchard, R. (1985). *Research methods for the typological study of gender disorders in males*. In B. W. Steiner (Ed.), *Gender dysphoria: Development, research, management* (pp. 227-257). New York: Plenum Press.
- Blanchard R, Clemmensen LH, Steiner BW. Heterosexual and homosexual gender dysphoria. *Arch Sex Behav*. 1987 Apr;16(2):139-52. PMID: 3592961.
- Blanchard R, Steiner BW, Clemmensen LH, Dickey R. Prediction of regrets in postoperative transsexuals. *Can J Psychiatry*. 1989 Feb;34(1):43-5. PMID: 2924248.
- Bockting W, Coleman E, De Cuypere G. Care of transsexual persons. *N Engl J Med*. 2011 Jun 30;364 (26):2559-60; author reply 2560. PMID: 21714669.
- Bodlund O, Armelius K. Self-image and personality traits in gender identity disorders: an empirical study. *J Sex Marital Ther*. 1994 Winter;20(4):303-17. PMID: 7897678.
- Bodlund O, Kullgren G. Transsexualism general outcome and prognostic factors: a five-year follow- up study of nineteen transsexuals in the process of changing sex. *Arch Sex Behav*. 1996 Jun;25 (3):303-16. PMID: 8726553.
- Boehmer AL, Brinkmann AO, Sandkuijl LA, Halley DJ, Niermeijer MF, Andersson S, de Jong FH, Kayserili H, de Vroede MA, Otten BJ, Rouwé CW, Mendonça BB, Rodrigues C, Bode HH, de Ruiter PE, Delemarre-van de Waal HA, Drop SL. 17Beta-hydroxysteroid dehydrogenase-3 deficiency: diagnosis, phenotypic variability, population genetics, and worldwide distribution of ancient and de novo mutations. *J Clin Endocrinol Metab*. 1999 Dec;84(12):4713-21. PMID: 10599740.
- Boehmer U. Twenty years of public health research: inclusion of lesbian, gay, bisexual, and transgender populations. *Am J Public Health*. 2002 Jul;92(7):1125-30. PMID: 12084696.
- Bonifacio HJ, Rosenthal SM. Gender Variance and Dysphoria in Children and Adolescents. *Pediatr Clin North Am*. 2015 Aug;62(4):1001-16. Epub 2015 Jun 11. PMID: 26210629.
- Borsboom D, Mellenbergh GJ, van Heerden J. The theoretical status of latent variables. *Psychol Rev*. 2003 Apr;110(2):203-19. PMID: 12747522.
- Bouman M, van Zeijl M, Buncamper M, Meijerink W, van Bodegraven A, Mullender M. Intestinal vaginoplasty revisited: a review of surgical techniques, complications, and sexual function. *J Sex Med*. 2014 Jul;11(7):1835-47. Epub 2014 Apr 4. PMID: 24697986.
- Bowman E, Oprea G, Okoli J, Gundry K, Rizzo M, Gabram-Mendola S, Manne U, Smith G, Pambuccian S, Bumpers HL. Pseudoangiomatous stromal hyperplasia (PASH) of the breast: a series of 24 patients. *Breast J*. 2012 May-Jun;18(3):242-7. PMID: 22583194.
- Broderick JP. Devices and clinical trials: overview and equipoise. *Stroke*. 2013 Jun;44(6 Suppl 1):S3-6. PMID: 23709721.
- Brown L (Ed.). (1997) *Two Spirit People: American Indian, lesbian women and gay men*. Routledge.

Bye L, Gruskin E, Greenwood, G, Albright V, Krotki K. California Lesbians, Gays, Bisexuals, and Transgender (LGBT) Tobacco Use Survey – 2004. *Sacramento, CA: California Department of Health Services*, 2005. (Not in PubMed)

Byne, W, Bradley SJ, Coleman E, Eyler AE, Green R, Menvielle EJ, Meyer-Bahlburg HFL, Richard R, Pleak RR, Tompkins DA. American Psychiatric Association. Report of the American Psychiatric Association Task Force on Treatment of Gender Identity Disorder. *Arch Sex Behav* 2012 Aug;41(4):759-96. PMID: 22854940.

Callens N, De Cuypere G, Van Hoecke E, T'sjoen G, Monstrey S, Cools M, Hoebeke P. Sexual quality of life after hormonal and surgical treatment, including phalloplasty, in men with micropenis: a review. *J Sex Med*. 2013 Dec;10(12):2890-903. Epub 2013 Aug 23. PMID: 23981815.

Callens N, Hoebeke P. Phalloplasty: A panacea for 46, XY disorder of sex development conditions with penile deficiency? *Endocr Dev*. 2014;27:222-33. Epub 2014 Sep 9. PMID: 25247659.

Cameron D. Language, gender, and sexuality: Current issues and new directions. *Applied Linguistics*. 2005; 26(4):482-502. (Not in PubMed)

Casella R, Bubendorf L, Schaefer D, Bachmann A, Gasser T, Sulser T. Does the prostate really need androgens to grow? Transurethral resection of the prostate in a male-to-female transsexual 25 years after sex-changing operation. *Urol Int*. 2005;75(3):288-90. PMID: 16215322.

Cantor JM. New MRI studies support the Blanchard typology of male-to-female transsexualism. *Arch Sex Behav*. 2011 Oct;40(5):863-4. PMID: 21739338.

Cebula H, Pham TQ, Boyer P, Froelich S. Regression of meningiomas after discontinuation of cyproterone acetate in a transsexual patient. *Acta Neurochir (Wien)*. 2010 Nov;152(11):1955-6. Epub 2010 Sep 3. PMID: 20811919.

Cerwenka S, Nieder T, Cohen-Kettenis P, De Cuypere G, Haraldsen I, Kreukels B, Richter-Appelt H. Sexual behavior of gender-dysphoric individuals before gender-confirming interventions: a European multicenter study. *J Sex Marital Ther* 2014;40(5):457-71. PMID: 24846436.

Chan AW, Altman DG. Epidemiology and reporting of randomised trials published in PubMed journals. *Lancet*. 2005 Mar 26-Apr 1;365(9465):1159-62. PMID: 15794971.

Chen S, McFarland W, Thompson HM, Raymond HF. Transmen in San Francisco: what do we know from HIV test site data? *AIDS Behav*. 2011 Apr;15(3):659-62. PMID: 21153048.

Chinas, B. (1995). Isthmus Zapotec attitudes toward sex and gender anomalies. In S. O. Murray (Ed.), *Latin American male homosexualities* (pp. 293-302). Albuquerque, NM: University of New Mexico Press.

Chiong W. The real problem with equipoise. *Am J Bioeth*. 2006 Jul-Aug;6(4):37-47. PMID: 16885104.

CHIS 2009: California Health Interview Survey, 2009. "AskCHIS" via the UCLA Center for Health Policy Research data website [ask.chis.ucla.edu/](http://ask.chis.ucla.edu/).

Chong JM. Social assessment of transsexuals who apply for sex reassignment therapy. *Soc Work Health Care*. 1990;14(3):87-105. PMID: 2367927.

Claes L, Bouman W, Witcomb G, Thurston M, Fernandez-Aranda F, Arcelus J. Non-suicidal self-injury in trans people: associations with psychological symptoms, victimization, interpersonal functioning, and perceived social support. *J Sex Med*. 2015 Jan;12(1):168-79. Epub 2014 Oct 6. PMID: 25283073.

Clement U, Löwe B. [Validation of the FKB-20 as scale for the detection of body image distortions in psychosomatic patients]. *Psychother Psychosom Med Psychol*. 1996 Jul;46(7):254-9. German. PMID: 8765897.

Clements-Nolle K, Marx R, Katz M. Attempted suicide among transgender persons: The influence of gender-based discrimination and victimization. *J Homosex*. 2006;51(3):53-69. PMID: 17135115.

CMS Office of Minority Health. New Directions in CMS Disparities Research: Sexual Orientation & Gender Identity. 2015. Academy Health Annual Research Meeting, Minneapolis, Minnesota.

CMS Office of Minority Health. If You Build It, They Will Come: Accessing and Utilizing HHS LGBTI Data and Information Products. 2015. Gay and Lesbian Medical Association Meeting, Portland, Oregon.

Cohen-Kettenis PT, van Goozen SH. Sex reassignment of adolescent transsexuals: a follow-up study. *J Am Acad Child Adolesc Psychiatry*. 1997 Feb;36(2):263-71. PMID: 9031580.

A Cohen-Kettenis P. Psychological long-term outcome in intersex conditions. *Horm Res*. 2005;64 Suppl 2:27-30. PMID: 16286767.

B Cohen-Kettenis PT. Gender change in 46 XY persons with 5alpha-reductase-2 deficiency and 17beta-hydroxysteroid dehydrogenase-3 deficiency. *Arch Sex Behav*. 2005 Aug;34(4):399-410. PMID: 16010463.

Cohen-Kettenis P, Pfäfflin F. The DSM diagnostic criteria for gender identity disorder in adolescents and adults. *Arch Sex Behav*. 2010 Apr;39(2):499-513. PMID: 19838784.

Colizzi M, Costa R, Pace V, Todarello O. Hormonal treatment reduces psychobiological distress

in gender identity disorder, independently of the attachment style. *J Sex Med*. 2013 Dec;10(12):3049-58. Epub 2013 Apr 9. PMID: 23574768.

Colizzi M, Costa R, Todarello O. Transsexual patients' psychiatric comorbidity and positive effect of cross-sex hormonal treatment on mental health: results from a longitudinal study. *Psychoneuroendocrinology*. 2014 Jan;39:65-73. Epub 2013 Oct 10. PMID: 24275005.

Colizzi M, Costa R, Scaramuzzi F, Palumbo C, Tyropani M, Pace V, Quagliarella L, Brescia F, Natilla LC, Loverro G, Todarello O. Concomitant psychiatric problems and hormonal treatment induced metabolic syndrome in gender dysphoria individuals: a 2 year follow-up study. *J Psychosom Res*. 2015 Apr;78(4):399-406. Epub 2015 Feb 10. PMID: 25691225.

Coleman E, Colgan P, Gooren L. Male cross-gender behavior in Myanmar (Burma): A description of the acault. *Arch Sex Behav*. 1992 Jun;21(3):313-21. PMID: 1535191.

Coleman E, Bockting W, Botzer M, Cohen-Kettenis P, DeCuypere G, Feldman J, Fraser L, Green J, Knudson G, Meyer WJ, Monstrey S, Adler RK, Brown GR, Devor AH, Ehrbar R, Ettner R, Eyler E, Garofalo R, Karasic DH, Lev AI, Mayer G, Meyer-Bahlburg H, Hall BP, Pfäfflin F, Rachlin K, Robinson B, Schechter LS, Tangpricha V, van Trotsenburg M, Vitale A, Winter S, Whittle S, Kevan R, Wylie KR, Zucker K. World Professional Association for Transgender Health (formerly the Harry Benjamin International Gender Dysphoria Association). Standards of Care for the Health of Transsexual, Transgender, and Gender- Nonconforming People (Version 7). *Int J Transgend*. 2011;13:165-232. © 2012 World Professional Association for Transgender Health (WPATH). (not in Pubmed)  
[www.wpath.org/uploaded\\_files/140/files/Standards%20of%20Care,%20V7%20Full%20Book.pdf](http://www.wpath.org/uploaded_files/140/files/Standards%20of%20Care,%20V7%20Full%20Book.pdf).

Conron KJ, Scott G, Stowell GS, Landers SJ. Transgender health in Massachusetts: results from

a household probability sample of adults. *Am J Public Health*. 2012 Jan;102(1):118-22. Epub 2011 Nov 28. PMID: 22095354.

Corsello SM, Di Donna V, Senes P, Luotto V, Ricciato MP, Paragliola RM, Pontecorvi A. Biological aspects of gender disorders. *Minerva Endocrinol*. 2011 Dec;36(4):325-39. PMID: 22322655.

Costa L M, Matzner A. (2007). *Male bodies, women's souls: Personal narrative of Thailand's transgendered youth*. Routledge.

- Costantino A, Cerpolini S, Alvisi S, Morselli P, Venturoli S, Meriggiola M. A prospective study on sexual function and mood in female-to-male transsexuals during testosterone administration and after sex reassignment surgery. *J Sex Marital Ther.* 2013;39(4):321-35. Epub 2013 Mar 7. PMID: 23470169.
- Cregten-Escobar P, Bouman M, Buncamper M, Mullender M. Subcutaneous mastectomy in female-to-male transsexuals: a retrospective cohort-analysis of 202 patients. *J Sex Med* 2012 Dec;9(12):3148- 53. PMID: 23470169.
- Crown S, Crisp AH. A short clinical diagnostic self-rating scale for psychoneurotic patients. The Middlesex Hospital Questionnaire (M.H.Q.). *Br J Psychiatry.* 1966 Sep;112(490):917-23. PMID: 5970912.
- Crown S, Duncan KP, Howell RW. Further evaluation of the Middlesex Hospital Questionnaire (M.H.Q.). *Br J Psychiatry.* 1970 Jan;116(530):33-7. PMID: 5411005.
- Crown S. The Middlesex Hospital Questionnaire (MHQ) in clinical research. A review. *Mod Probl Pharmacopsychiatry.* 1974;7(0):111-24. PMID: 4607280.
- Cupisti S, Giltay EJ, Gooren LJ, Kronawitter D, Oppelt PG, Beckmann MW, Dittrich R, Mueller A. The impact of testosterone administration to female-to-male transsexuals on insulin resistance and lipid parameters compared with women with polycystic ovary syndrome. *Fertil Steril.* 2010 Dec;94 (7):2647-53. Epub 2010 May 7. PMID: 20451188.
- Day P. Tech Brief Series. *Trans-gender reassignment surgery.* New Zealand Health technology Assessment. (NZHTA). The clearinghouse for health outcomes and health technology assessment. [February 2002 Volume 1 Number 1. http://nzhta.chmeds.ac.nz/publications/trans\\_gender.pdf.](http://nzhta.chmeds.ac.nz/publications/trans_gender.pdf)
- De Cuypere G, T'Sjoen G, Beerten R, Selvaggi G, De Sutter P, Hoebeke P, Monstrey S, Vansteenwegen A, Rubens R. Sexual and physical health after sex reassignment surgery. *Arch Sex Behav.* 2005 Dec;34(6):679-90. PMID: 16362252.
- De Cuypere G, Elaut E, Heylens G, van Maele G, Selvaggi G, T'Sjoen G, Rubens R, Hoebeke R, Monstrey S. Long-term follow-up: psychosocial outcome of Belgian transsexuals after sex reassignment surgery. *J Sexol.* 2006;15:126-33. (Not in PubMed)
- De Cuypere G, Van Hemelrijck M, Michel A, Carael B, Heylens G, Rubens R, Hoebeke P, Monstrey S. Prevalence and demography of transsexualism in Belgium. *Eur Psychiatry.* 2007 Apr;22(3):137- 41. Epub 2006 Dec 26. PMID: 17188846.
- Deeks JJ, Dinnes J, D'Amico R, Sowden AJ, Sakarovich C, Song F, Petticrew M, Altman DG; International Stroke Trial Collaborative Group; European Carotid Surgery Trial Collaborative Group. Evaluating non-randomised intervention studies. *Health Technol Assess.* 2003;7(27):iii-x, 1-173. PMID: 14499048.
- Deipolyi AR, Han SJ, Parsa AT. Development of a symptomatic intracranial meningioma in a male- to-female transsexual after initiation of hormone therapy. *J Clin Neurosci.* 2010 Oct;17(10):1324-6. Epub 2010 Jul 1. PMID: 20594855.
- Derogatis LR, Lipman RS, Covi L. SCL-90: an outpatient psychiatric rating scale preliminary report. *Psychopharmacol Bull.* 1973 Jan;9(1):13-28. PMID: 4682398.
- A-Derogatis LR, Lipman RS, Rickels K, Uhlenhuth EH, Covi L. The Hopkins Symptom Checklist (HSCL): a self-report symptom inventory. *Behav Sci.* 1974 Jan;19(1):1-15. PMID:
- B-Derogatis LR, Lipman RS, Rickels K, Uhlenhuth EH, Covi L. The Hopkins Symptom Checklist (HSCL). A measure of primary symptom dimensions. *Mod Probl Pharmacopsychiatry.* 1974;7(0):79- 110. PMID: 4607278.
- Derogatis LR, Cleary PA. Factorial invariance across gender for the primary symptom dimensions of the SCL-90. *Br J Soc Clin Psychol.* 1977 Nov;16(4):347-56 PMID: 588890.
- Derogatis LR, Meyer JK, Vazquez N. A psychological profile of the transsexual. I. The male. *J Nerv Ment Dis.* 1978 Apr;166(4):234-54. PMID: 650186.

Deutsch M, Bhakri V, Kubicek K. Effects of cross-sex hormone treatment on transgender women and men. *Obstet Gyneco*. 2015 Mar;125(3):605-10. PMID: 25730222.

de Vries A, Kreukels B, Steensma T, Doreleijers T, Cohen-Kettenis P. Comparing adult and adolescent transsexuals: an MMPI-2 and MMPI-A study. *Psychiatry Res* 2011 Apr 30;186 (2-3):414-8. PMID: 20801524.

Dhejne C, Lichtenstein P, Boman M, Johansson A, Långström N, Landén M. Long-term follow-up of transsexual persons undergoing sex reassignment surgery: cohort study in Sweden. *PLoS One* 2011;6 (2):e16885. Epub 2011 Feb 22. PMID: 21364939.

Dhejne C, Öberg K, Arver S, Landén M. An analysis of all applications for sex reassignment surgery in Sweden, 1960-2010: prevalence, incidence, and regrets. *Arch Sex Behav*. 2014 Nov;43(8):1535-45. Epub 2014 May 29. PMID: 24872188.

Dhillon R, Bastiampillai T, Krishnan S, Opray N, Tibrewal P. Transgender late onset psychosis: the role of sex hormones. *Aust N Z J Psychiatry*. 2011 Jul;45(7):603. Epub 2011 May 5. PMID: 21542781.

Diamond M. Developmental, sexual and reproductive neuroendocrinology: historical, clinical and ethical considerations. *Front Neuroendocrinol*. 2011 Apr;32(2):255-63. Epub 2011 Feb 18. PMID: 21310174.

Dittrich R, Binder H, Cupisti S, Hoffmann I, Beckmann M, Mueller A. Endocrine treatment of male- to-female transsexuals using gonadotropin-releasing hormone agonist. *Exp Clin Endocrinol Diabetes*. 2005 Dec;113(10):586-92. PMID: 16320157.

Djordjevic ML, Stanojevic DS, Bizic MR. Rectosigmoid vaginoplasty: clinical experience and outcomes in 86 cases. *J Sex Med*. 2011 Dec;8(12):3487-94. Epub 2011 Oct 13. PMID: 21995738.

Djordjevic ML, Bizic MR. Comparison of two different methods for urethral lengthening in female to male (metoidioplasty) surgery. *J Sex Med*. 2013 May;10(5):1431-8. Epub 2013 Feb 27. PMID: 23444841.

Doorduyn T, van Berlo W. Trans people's experience of sexuality in the Netherlands: a pilot study. *J Homosex*. 2014;61(5):654-72. PMID: 24295055.

Doorn CD, Poortinga J, Verschoor AM. Cross-gender identity in transvestites and male transsexuals. *Arch Sex Behav*. 1994 Apr;23(2):185-201. PMID: 8018022.

Doornaert M, Hoebeke P, Ceulemans P, T'Sjoen G, Heylens G, Monstrey S. Penile reconstruction with the radial forearm flap: an update. *Handchir Mikrochir Plast Chir*. 2011 Aug;43(4):208-14. Epub 2011 Aug 11.

A-Dos Ramos Farías MS, Picconi MA, Garcia MN, González JV, Basiletti J, Pando Mde L, Avila MM. Human papilloma virus genotype diversity of anal infection among trans (male to female transvestites, transsexuals or transgender) sex workers in Argentina. *J Clin Virol*. 2011 Jun;51 (2):96-9. Epub 2011 Apr 20. PMID: 21511521.

B-Dos Ramos Farías MS, Garcia MN, Reynaga E, Romero M, Vaulet ML, Fermepín MR, Toscano MF, Rey J, Marone R, Squiquera L, González JV, Basiletti J, Picconi MA, Pando MA, Avila MM. First report on sexually transmitted infections among trans (male to female transvestites, transsexuals, or transgender) and male sex workers in Argentina: high HIV, HPV, HBV, and syphilis prevalence. *Int J Infect Dis*. 2011 Sep;15(9):e635-40. Epub 2011 Jul 13. PMID: 21742530.

DSM: American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5*. Washington, D.C: American Psychiatric Association.

Dubois L. Associations between transition-specific stress experience, nocturnal decline in ambulatory blood pressure, and C-reactive protein levels among transgender men. *Am J Hum Biol* 2012 Jan- Feb;24(1):52-61. Epub 2011 Nov 28. PMID: 22120883.

Duisin D, Nikolić-Balkoski G, Batinić B. Sociodemographic profile of transsexual patients. *Psychiatr Danub*. 2009 Jun;21(2):220-3. PMID: 19556952.

Duišin D, Batinić B, Barišić J, Djordjevic ML, Vujović S, Bizic M. Personality disorders in persons with gender identity disorder. *ScientificWorldJournal*. 2014;2014:809058. Epub 2014 May 13. PMID: 24959629.

Dunn, OJ. Multiple Comparisons Among Means. *J Am Statis Assoc*. 1961 Mar; 56( 293): 52- 64. (Not in PubMed) [www.jstor.org/stable/2282330](http://www.jstor.org/stable/2282330).<sup>4</sup>

Elamin M, Garcia M, Murad M, Erwin P, Montori V. Effect of sex steroid use on cardiovascular risk in transsexual individuals: a systematic review and meta-analyses. *Clin Endocrinol (Oxf)*. 2010 Jan;72 (1):1-10. Epub 2009 May 16. PMID: 19473174.

Elaut E, Bogaert V, De Cuypere G, Weyers S, Gijs L, Kaufman J, T'Sjoen G. Contribution of androgen receptor sensitivity to the relation between testosterone and sexual desire: An exploration in male-to-female transsexuals. *J Endocrinol Invest*. 2010 Jan;33(1):37-41. Epub 2009 Jul 20. PMID: 19620824.

Eldh J, Berg A, Gustafsson M. Long-term follow up after sex reassignment surgery. *Scand J Plast Reconstr Surg Hand Surg*. 1997 Mar;31(1):39-45. PMID: 9075286.

Ettner R. Care of the elderly transgender patient. *Curr Opin Endocrinol Diabetes Obes* 2013 Dec;20 (6):580-4. PMID: 24468762.

Europe QOL 2010 Anderson R, Mikulić B, Vermeylen G, Lyly-Yrjanainen M, Zigante V. European Foundation for the Improvement of Living and Working Conditions. *Second European Quality of Life Survey: Family life and work-Overview*. EF0902. December 13, 2010. [www.eurofound.europa.eu/publications/report/2009/quality-of-life/second-european-quality-of-life-survey-overview](http://www.eurofound.europa.eu/publications/report/2009/quality-of-life/second-european-quality-of-life-survey-overview).<sup>4</sup>

Europe QOL 2011 Kotowska IE, Matysiak A, Styrc M, Pailhe A, Solaz, A Vignoli D. European Foundation for the Improvement of Living and Working Conditions. *Second European Quality of Life Survey: Family life and work*. EF1002. August 22, 2011. NLM classification: WC 503.6. [www.eurofound.europa.eu/publications/report/2010/quality-of-life-social-policies/second-european-quality-of-life-survey-family-life-and-work](http://www.eurofound.europa.eu/publications/report/2010/quality-of-life-social-policies/second-european-quality-of-life-survey-family-life-and-work).<sup>4</sup>

Fares WH. The 'availability' bias: underappreciated but with major potential implications. *Crit Care*. 2014 Mar 12;18(2):118. PMID: 25029621.

Ferring D, Filipp SH. Messung des Selbstwertgefühls: Befunde zu Reliabilität, Validität und Stabilität der Rosenberg-Skala [Measurement of self-esteem: Findings on reliability, validity, and stability of the Rosenberg Scale]. *Diagnostica*. 1996; 42: 284-292. German. (Not in PubMed)

Ferron P, Young S, Boulanger C, Rodriguez A, Moreno J. Integrated care of an aging HIV-infected male-to-female transgender patient. *J Assoc Nurses AIDS Care*. 2010 May-Jun;21(3):278-82. Epub 2010 Mar 19. PMID: 20303795.

Fisher AD, Bandini E, Casale H, Ferruccio N, Meriggiola MC, Gualerzi A, Manieri C, Jannini E, Mannucci E, Monami M, Stomaci N, Delle Rose A, Susini T, Ricca V, Maggi M. Sociodemographic and clinical features of gender identity disorder: an Italian multicentric evaluation. *J Sex Med*. 2013 Feb;10(2):408-19. Epub 2012 Nov 21. PMID: 23171237.

Flanagan BM, Philpott S, Strosberg MA. Protecting participants of clinical trials conducted in the intensive care unit. *J Intensive Care Med*. 2011 Jul-Aug;26(4):237-49. PMID: 21764767.

Fleming M, Steinman C, Bocknek G. Methodological problems in assessing sex-reassignment surgery: a reply to Meyer and Reter. *Arch Sex Behav*. 1980 Oct;9(5):451-6. PMID: 7447685.

Fleming M, Cohen D, Salt P, Jones D, Jenkins S. A study of pre- and postsurgical transsexuals: MMPI characteristics. *Arch Sex Behav*. 1981 Apr;10(2):161-70. PMID: 7247725.



Flores A, Herman J, Gates G, Brown T. (2016) *How many adults identify as transgender in the United States?* Los Angeles, CA: The Williams Institute.

Frances AJ, Nardo JM. ICD-11 should not repeat the mistakes made by DSM-5. *Br J Psychiatry*. 2013 Jul;203(1):1-2. PMID: 23818530.

Frade-Costa EM, Bilharinho Mendonca B. Clinical management of transsexual subjects. *Arq Bras Endocrinol Metab*. 2014;58(2):188-96. (Not in PubMed)

Franco T, Miranda L, Franco D, Zaidhaft S, Aran M. Male-to-female transsexualsurgery: experience at the UFRJ University Hospital. *Rev Col Bras Cir*. 2010 Dec;37(6):426-34. PMID: 21340258.

Fuss J, Biedermann S, Stalla G, Auer M. On the quest for a biomechanism of transsexualism: is there a role for BDNF? *J Psychiatr Res*. 2013 Dec;47(12):2015-7. Epub 2013 Sep 7. PMID: 23915300.

Futterweit W. Endocrine therapy of transsexualism and potential complications of long-term treatment. *Arch Sex Behav*. 1998 Apr;27(2):209-26. PMID: 9562902.

Garaffa G, Raheem AA, Ralph DJ. An update on penile reconstruction. *Asian J Androl*. 2011 May;13 (3):391-4. PMID: 22426595.

Garaffa G, Gentile V, Antonini G, Tsafarakidis P, Raheem AA, Ralph DJ. Penile reconstruction in the male. *Arab J Urol*. 2013 Sep;11(3):267-71. Epub 2013 Jun 12. PMID: 26558091.

Garcia-Falgueras A, Swaab DF. Sexual hormones and the brain: an essential alliance for sexual identity and sexual orientation. *Endocr Dev*. 2010;17:22-35. Epub 2009 Nov 24. PMID: 19955753.

Garcia-Falgueras A, Ligtenberg L, Kruijver FP, Swaab DF. Galanin neurons in the intermediate nucleus (InM) of the human hypothalamus in relation to sex, age, and gender identity. *J Comp Neurol*. 2011 Oct 15;519(15):3061-84. PMID: 21618223.

García-Malpartida K, Martín-Gorgojo A, Rocha M, Gómez-Balaguer M, Hernández-Mijares A. Prolactinoma induced by estrogen and cyproterone acetate in a male-to-female transsexual. *Fertil Steril*. 2010 Aug;94(3):1097.e13-5. Epub 2010 Mar 12. PMID: 20227072.

Garrels L, Kockott G, Michael N, Preuss W, Renter K, Schmidt G, Sigusch V, Windgassen K. Sex ratio of transsexuals in Germany: the development over three decades. *Acta Psychiatr Scand*. 2000 Dec;102(6):445-8. PMID: 11142434.

Gaspari L, Paris F, Philibert P, Audran F, Orsini M, Servant N, Maïmoun L, Kalfa N, Sultan C. 'Idiopathic' partial androgen insensitivity syndrome in 28 newborn and infant males: impact of prenatal exposure to environmental endocrine disruptor chemicals? *Eur J Endocrinol*. 2011 Oct;165 (4):579-87. Epub 2011 Jul 25. PMID: 21788424.

Gates GJ. How many people are lesbian, gay, bisexual, and transgender? 2011. (Not in PubMed)  
[williamsinstitute@law.ucla.edu](mailto:williamsinstitute@law.ucla.edu).<sup>67</sup>

Giami A, Le Bail J. HIV infection and STI in the trans population: a critical review. *Rev Epidemiol Sante Publique*. 2011 Aug;59(4):259-68. Epub 2011 Jul 20. PMID: 21767925.

Glezer A, McNeil D, Binder R. Transgendered and incarcerated: a review of the literature, current policies and laws, and ethics. *J Am Acad Psychiatry Law*. 2013;41(4):551-9. PMID: 24335329.

A-Goddard JC, Vickery RM, Terry TR. Development of feminizing genitoplasty for gender dysphoria. *J Sex Med*. 2007 Jul;4(4 Pt 1):981-9. Epub 2007 Apr 19. PMID: 17451484.

B-Goddard JC, Vickery RM, Qureshi A, Summerton DJ, Khoosal D, Terry TR. Feminizing genitoplasty in adult transsexuals: early and long-term surgical results. *BJU Int*. 2007 Sep;100(3):607- 13. PMID: 17669144.

Godlewski J. Transsexualism and anatomic sex ratio reversal in Poland. *Arch Sex Behav.* 1988 Dec;17(6):547-8. PMID: 3265612.

Goldberg DP, Blackwell B. Psychiatric illness in general practice. A detailed study using a new method of case identification. *Br Med J.* 1970 May 23;1(5707):439-43. PMID: 5420206.

Goldman M. Spring 2008 - Stat C141/ Bioeng C141 - Statistics for Bioinformatics. Course Website: <http://www.stat.berkeley.edu/users/hhuang/141C-2008.html>. Section Website: <http://www.stat.berkeley.edu/users/mgoldman>.<sup>4</sup>

Gómez-Gil E, Trilla García A, Godás Sieso T, Halperin Rabinovich I, Puig Domingo M, Vidal Hagemeijer A, Peri Nogués JM. Estimation of prevalence, incidence and sex ratio of transsexualism in Catalonia according to health care demand. *Actas Esp Psiquiatr.* 2006 Sep-Oct;34(5):295-302. Spanish. PMID: 17117339.

Gómez-Gil E, Vidal-Hagemeijer A, Salamero M. MMPI-2 characteristics of transsexuals requesting sex reassignment: comparison of patients in prehormonal and presurgical phases. *J Pers Assess.* 2008 Jul;90(4):368-74. PMID: 18584445.

Gómez-Gil E, Trilla A, Salamero M, Godás T, Valdés M. Sociodemographic, clinical, and psychiatric characteristics of transsexuals from Spain. *Arch Sex Behav.* 2009 Jun;38(3):378-92. Epub 2008 Feb 21. PMID: 18288600.

Gómez-Gil E, Esteva I, Almaraz M, Pasaro E, Segovia S, Guillamon A. Familiality of gender identity disorder in non-twin siblings. *Arch Sex Behav.* 2010 Apr;39(2):546-52. Epub 2009 Jul 29. PMID: 19639402.

Gómez-Gil E, Esteva I, Carrasco R, Almaraz MC, Pasaro E, Salamero M, Guillamon A. Birth order and ratio of brothers to sisters in Spanish transsexuals. *Arch Sex Behav.* 2011 Jun;40(3):505-10. Epub 2010 Mar 16. PMID: 20232130.

A-Gómez-Gil E, Gómez A, Cañizares S, Guillamón A, Rametti G, Esteva I, Vázquez A, Salamero- Baró M. Clinical utility of the Bem Sex Role Inventory (BSRI) in the Spanish transsexual and nontranssexual population. *J Pers Assess.* 2012;94(3):304-9. Epub 2012 Jan 13. PMID: 22242861.

B-Gómez-Gil E, Zubiaurre-Elorza L, Esteva I, Guillamon A, Godás T, Cruz Almaraz M, Halperin I, Salamero M. Hormone-treated transsexuals report less social distress, anxiety and depression. *Psychoneuroendocrinology.* 2012 May;37(5):662-70. Epub 2011 Sep 19. PMID: 21937168.

Gómez-Gil E, Zubiaurre-Elorza L, de Antonio I, Guillamon A, Salamero M. Determinants of quality of life in Spanish transsexuals attending a gender unit before genital sex reassignment surgery. *Qual Life Res.* 2014 Mar;23(2):669-76. Epub 2013 Aug 13. PMID: 23943260.

Gooren L. Hormone treatment of the adult transsexual patient. *Horm Res.* 2005;64 Suppl 2:31-6. PMID: 16286768.

Gooren L. Clinical practice. Care of transsexual persons. *N Engl J Med.* 2011 Mar 31;364(13):1251-7. PMID: 21449788.

A-Gooren L, Giltay E. Men and women, so different, so similar: observations from cross-sex hormone treatment of transsexual subjects. *Andrologia.* 2014 Jun;46(5):570-5. Epub 2013 May 19. PMID: 23682909.

B-Gooren L. Management of female-to-male transgender persons: medical and surgical management, life expectancy. *Curr Opin Endocrinol Diabetes Obes.* 2014 Jun;21(3):233-8. PMID: 24755998.

C-Gooren LJ, Wierckx K, Giltay EJ. Cardiovascular disease in transsexual persons treated with cross- sex hormones: reversal of the traditional sex difference in cardiovascular disease pattern. *Eur J Endocrinol.* 2014 Jun;170(6):809-19. Epub 2014 Mar 10. PMID: 24616414.

D-Gooren L, Lips P. Conjectures concerning cross-sex hormone treatment of aging transsexual persons. *J Sex Med.* 2014 Aug;11(8):2012-9. Epub 2014 Apr 29. PMID: 24775178.



E-Gooren L, Morgentaler A. Prostate cancer incidence in orchidectomised male-to-female transsexual persons treated with oestrogens. *Andrologia*. 2014 Dec;46(10):1156-60. Epub 2013 Dec 12. PMID: 24329588.

Gorin-Lazard A, Baumstarck K, Boyer L, Maquigneau A, Gebleux S, Penochet J, Pringuey D, Albarel F, Morange I, Loundou A, Berbis J, Auquier P, Lançon C, Bonierbale M. Is hormonal therapy associated with better quality of life in transsexuals? A cross-sectional study. *J Sex Med*. 2012 Feb;9 (2):531-41. Epub 2011 Dec 6. PMID: 22145968.

Gorin-Lazard A, Baumstarck K, Boyer L, Maquigneau A, Penochet J, Pringuey D, Albarel F, Morange I, Bonierbale M, Lançon C, Auquier P. Hormonal therapy is associated with better self- esteem, mood, and quality of life in transsexuals. *J Nerv Ment Dis*. 2013 Nov;201(11):996-1000. PMID: 24177489.

Grant JE, Flynn M, Odlaug BL, Schreiber LR. Personality disorders in gay, lesbian, bisexual, and transgender chemically dependent patients. *Am J Addict*. 2011 Sep-Oct;20(5):05-11. Epub 2011 Jul 18. PMID: 21838838.

Green R. Sexual functioning in post-operative transsexuals: male-to-female and female-to-male. *Int J Impot Res*. 1998 May;10 Suppl 1:S22-4. PMID: 9669217.

Greenberg G, Frank G. Response set in the Tennessee Department of Mental Health Self Concept Scale. *J Clin Psychol*. 1965 Jul;21:287-8. PMID: 14332192.

Greenberg RP, Laurence L. A comparison of the MMPI results for psychiatric patients and male applicants for transsexual surgery. *J Nerv Ment Dis*. 1981 May;169(5):320-3. PMID: 7217944.

Gurtman MB. Interpersonal Problems and the Psychotherapy Context: The Construct Validity of the Inventory of Interpersonal Problems. *Psychological Assessment*. 1996; 8 (3):241-55. (Not in PubMed)

Guadamuz TE, Wimonasate W, Varangrat A, Phanuphak P, Jommaroeng R, McNicholl JM, Mock PA, Tappero JW, van Griensven F. HIV prevalence, risk behavior, hormone use and surgical history among transgender persons in Thailand. *AIDS Behav*. 2011 Apr;15(3):650-8. PMID: 21104008.

A-Guyatt GH, Oxman AD, Vist GE, Kunz R, Falck-Ytter Y, Alonso-Coello P, Schünemann HJ; GRADE Working Group. GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. *BMJ*. 2008 Apr 26;336(7650):924-6. PMID: 18436948.

B-Guyatt GH, Oxman AD, Kunz R, Vist GE, Falck-Ytter Y, Schünemann HJ; GRADE Working Group. What is "quality of evidence" and why is it important to clinicians? *BMJ*. 2008 May 3;336 (7651):995-8. PMID: 18456631.

C-Guyatt GH, Oxman AD, Kunz R, Falck-Ytter Y, Vist GE, Liberati A, Schünemann HJ; GRADE Working Group. Going from evidence to recommendations. *BMJ*. 2008 May 10;336(7652): 1049-51. Erratum in: *BMJ*. 2008 Jun 21;336(7658). PMID: 18467413.

A-Guyatt GH, Oxman AD, Kunz R, Atkins D, Brozek J, Vist G, Alderson P, Glasziou P, Falck-Ytter Y, Schünemann HJ. GRADE guidelines: 2. Framing the question and deciding on important outcomes. *J Clin Epidemiol*. 2011 Apr;64(4):395-400. Epub 2010 Dec 30. PMID: 21194891.

B-Guyatt GH, Oxman AD, Vist G, Kunz R, Brozek J, Alonso-Coello P, Montori V, Akl EA, Djulbegovic B, Falck-Ytter Y, Norris SL, Williams JW Jr, Atkins D, Meerpohl J, Schünemann HJ. GRADE guidelines: 4. Rating the quality of evidence study limitations (risk of bias). *J Clin Epidemiol*. 2011 Apr;64(4):407-15. doi: 10.1016/j.jclinepi.2010.07.017. Epub 2011 Jan 19. PMID: 21247734.

C-Guyatt GH, Oxman AD, Montori V, Vist G, Kunz R, Brozek J, Alonso-Coello P, Djulbegovic B, Atkins D, Falck-Ytter Y, Williams JW Jr, Meerpohl J, Norris SL, Akl EA, Schünemann HJ. GRADE guidelines: 5. Rating the quality of evidence publication bias. *J Clin Epidemiol*. 2011 Dec;64 (12):1277-82. Epub 2011 Jul 30. PMID: 21802904.

- D-Guyatt GH, Oxman AD, Kunz R, Woodcock J, Brozek J, Helfand M, Alonso-Coello P, Glasziou P, Jaeschke R, Akl EA, Norris S, Vist G, Dahm P, Shukla VK, Higgins J, Falck-Ytter Y, Schünemann HJ; GRADE Working Group. GRADE guidelines: 7. Rating the quality of evidence inconsistency. *J Clin Epidemiol*. 2011 Dec;64(12):1294-302. Epub 2011 Jul 31. PMID: 21803546.
- E-Guyatt GH, Oxman AD, Kunz R, Woodcock J, Brozek J, Helfand M, Alonso-Coello P, Falck-Ytter Y, Jaeschke R, Vist G, Akl EA, Post PN, Norris S, Meerpohl J, Shukla VK, Nasser M, Schünemann HJ; GRADE Working Group. GRADE guidelines: 8. Rating the quality of evidence indirectness. *J Clin Epidemiol*. 2011 Dec;64(12):1303-10. Epub 2011 Jul 30. PMID: 21802903.
- Haas AP, Eliason M, Mays VM, Mathy RM, Cochran SD, D'Augelli AR, Silverman MM, Fisher PW, Hughes T, Rosario M, Russell ST, Malley E, Reed J, Litts DA, Haller E, Sell RL, Remafedi G, Bradford J, Beautrais AL, Brown GK, Diamond GM, Friedman MS, Garofalo R, Turner MS, Hollibaugh A, Clayton PJ. Suicide and suicide risk in lesbian, gay, bisexual, and transgender populations: review and recommendations. *J Homosex*. 2011;58(1):10-51. PMID: 21213174.
- Hage JJ, De Graaf FH. Addressing the ideal requirements by free flap phalloplasty: some reflections on refinements of technique. *Microsurgery*. 1993;14(9):592-8. PMID: 8289643.
- Hage JJ, Karim RB. Ought GIDNOS get nought? Treatment options for nontranssexual gender dysphoria. *Plast Reconstr Surg*. 2000 Mar;105(3):1222-7. PMID: 10724285.
- Hale JC. Ethical problems with the mental health evaluation standards of care for adult gender variant prospective patients. *Perspectives in Biology and Medicine*. 2007Autumn;50(4):491-505. (Not in PubMed)
- Haraldsen IR, Dahl AA. Symptom profiles of gender dysphoric patients of transsexual type compared to patients with personality disorders and healthy adults. *Acta Psychiatr Scand*. 2000 Oct;102(4):276- 81. PMID: 11089727.
- Hare L, Bernard P, Sánchez FJ, Baird PN, Vilain E, Kennedy T, Harley VR. Androgen receptor repeat length polymorphism associated with male-to-female transsexualism. *Biol Psychiatry*. 2009 Jan 1;65(1):93-6. Epub 2008 Oct 28. PMID: 18962445.
- Hathaway S, Briggs P. Some normative data on new MMPI scales. *J Clin Psychol*. 1957 Oct;13 (4):364-8. PMID: 13463138.
- Hathaway SR, Reynolds PC, Monachesi ED. Follow-up of the later careers and lives of 1,000 boys who dropped out of high school. *J Consult Clin Psychol*. 1969 Jun;33(3):370-80. PMID: 4389336.
- Hebbbar S, Pandey H, Chawla A. Understanding King's Health Questionnaire (KHQ) in assessment of female urinary incontinence. *Int J Res Med Sci* 2015;3:531-8.
- Hembree WC, Cohen-Kettenis P, Delemarre-van de Waal HA, Gooren LJ, Meyer WJ 3rd, Spack NP, Tangpricha V, Montori VM; Endocrine Society. Endocrine Treatment of Transsexual Persons: an Endocrine Society Clinical Practice Guideline. *J Clin Endocrinol Metab*. 2009;94:3132-54. PMID: 19509099.
- Hembree WC. Guidelines for pubertal suspension and gender reassignment for transgender adolescents. *Child Adolesc Psychiatr Clin N Am*. 2011 Oct;20(4):725-32. PMID: 22051008.
- Hepp U, Klaghofer R, Burkhard-Kübler R, Buddeberg C. [Treatment follow-up of transsexual patients. A catamnestic study]. *Nervenarzt*. 2002 Mar;73(3):283-8. German. PMID: 11963265.
- Hepp U, Kraemer B, Schnyder U, Miller N, Delsignore A. Psychiatric comorbidity in gender identity disorder. *J Psychosom Res*. 2005 Mar;58(3):259-61. PMID: 15865950.
- Herbst J, Jacobs E, Finlayson T, McKleroy V, Neumann M, Crepaz N. Estimating HIV prevalence and risk behaviors of transgender persons in the United States: a systematic review. *AIDS Behav*. 2008 Jan;12(1):1-17. Epub 2007 Aug 13. PMID: 17694429.

Heresová J, Pobisová Z, Hampl R, Stárka L. Androgen administration to transsexual women. II. Hormonal changes. *Exp Clin Endocrinol*. 1986 Dec;88(2):219-23. PMID: 3556412.

Hormonal changes. *Exp Clin Endocrinol*. 1986 Dec;88(2):219-23. PMID: 3556412.

Hess J, Rossi Neto R, Panic L, Rübben H, Senf W. Satisfaction with male-to-female gender reassignment surgery. *Dtsch Arztebl Int*. 2014 Nov 21;111(47):795-801. PMID: 25487762.

A-Heylens G, Verroken C, De Cock S, T'Sjoen G, De Cuypere G. Effects of different steps in gender reassignment therapy on psychopathology: a prospective study of persons with a gender identity disorder. *J Sex Med*. 2014 Jan;11(1):119-26. Epub 2013 Oct 28. PMID: 24344788.

B-Heylens G, Elaut E, Kreukels BP, Paap MC, Cerwenka S, Richter-Appelt H, Cohen-Kettenis PT, Haraldsen I, De Cuypere G. Psychiatric characteristics in transsexual individuals: multicentre study in four European countries. *Br J Psychiatry*. 2014 Feb;204(2):151-6. Epub 2013 May 9. PMID: 23869030.

HHS-HP: US Department of Health and Human Services. Lesbian, gay, bisexual and transgender health: objectives. Healthy People 2020. [www.healthypeople.gov/2020/topics/objectives2020/overview.aspx?topicid=25](http://www.healthypeople.gov/2020/topics/objectives2020/overview.aspx?topicid=25).

HHS-2011: US Department of Health and Human Services. Affordable Care Act to improve data collection, reduce health disparities. [www.hhs.gov/news/press/2011pres/06/20110629a.html](http://www.hhs.gov/news/press/2011pres/06/20110629a.html).

Hines M, Ahmed SF, Hughes IA. Psychological outcomes and gender-related development in complete androgen insensitivity syndrome. *Arch Sex Behav*. 2003 Apr;32(2):93-101. PMID: 12710824.

Hoekzema E, Schagen SE, Kreukels BP, Veltman DJ, Cohen-Kettenis PT, Delemarre-van de Waal H, Bakker J. Regional volumes and spatial volumetric distribution of gray matter in the gender dysphoric brain. *Psychoneuroendocrinology*. 2015 May;55:59-71. Epub 2015 Jan 30. PMID: 25720349.

Hoenig J, Kenna J, Youd A. A follow-up study of transsexualists: social and economic aspects. *Psychiatr Clin (Basel)*. 1970;3(2):85-100. PMID: 5424767.

Hoenig J, Kenna JC, Youd A. Surgical treatment for transsexualism. *Acta Psychiatr Scand*. 1971;47 (1):106-33 or 36. PMID: 5096332 or 5148350.

Hoenig J, Kenna J. Epidemiological aspects of transsexualism. *Psychiatr Clin (Basel)*. 1973;6(2):65- 80. PMID: 4705331.

Hoffman B. An Overview of Depression among Transgender Women. *Depress Res Treat*. 2014;2014:394283. Epub 2014 Mar 13. PMID: 24744918.

Hopewell S, Loudon K, Clarke MJ, Oxman AD, Dickersin K. Publication bias in clinical trials due to statistical significance or direction of trial results. *Cochrane Database Syst Rev*. 2009 Jan 21; (1):MR000006. PMID: 19160345.

Hopewell S, Dutton S, Yu LM, Chan AW, Altman DG. The quality of reports of randomised trials in 2000 and 2006: comparative study of articles indexed in PubMed. *BMJ*. 2010 Mar 23;340:c723. PMID: 20332510.

Hopewell S, Hirst A, Collins GS, Mallett S, Yu LM, Altman DG. Reporting of participant flow diagrams in published reports of randomized trials. *Trials*. 2011 Dec 5;12:253. PMID: 22141446.

Horbach S, Bouman M, Smit J, Özer M, Buncamper M, Mullender M. Outcome of Vaginoplasty in Male-to-Female Transgenders: A Systematic Review of Surgical Techniques. *J Sex Med*. 2015 Jun;12(6):1499-512. Epub 2015 Mar 26. PMID: 25817066.

Horowitz LM, Rosenberg SE, Baer BA, Ureño G, Villaseñor VS. Inventory of interpersonal problems: psychometric properties and clinical applications. *J Consult Clin Psychol*. 1988 Dec;56 (6):885-92. PMID: 3204198.

- Hoshiai M, Matsumoto Y, Sato T, Ohnishi M, Okabe N, Kishimoto Y, Terada S, Kuroda S. Psychiatric comorbidity among patients with gender identity disorder. *Psychiatry Clin Neurosci*. 2010 Oct;64(5):514-9. Epub 2010 Aug 19. PMID: 20727112.
- A-Hunt DD, Hampson JL. Follow-up of 17 biologic male transsexuals after sex-reassignment surgery. *Am J Psychiatry*. 1980 Apr;137(4):432-8. PMID: 7361928.
- B-Hunt DD, Hampson JL. Transsexualism: a standardized psychosocial rating format for the evaluation of results of sex reassignment surgery. *Arch Sex Behav*. 1980 Jun;9(3):255-63. PMID: 7396697.
- Hunt DD, Carr JE, Hampson JL. Cognitive correlates of biologic sex and gender identity in transsexualism. *Arch Sex Behav*. 1981 Feb;10(1):65-77. PMID: 7011255.
- Inoubli A, De Cuyper G, Rubens R, Heylens G, Elaut E, Van Caenegem E, Menten B, T'Sjoen G. Karyotyping, is it worthwhile in transsexualism? *J Sex Med*. 2011 Feb;8(2):475-8. Epub 2010 Nov 29. PMID: 21114769.
- A-Imperato-McGinley J. 5alpha-reductase-2 deficiency and complete androgen insensitivity: lessons from nature. *Adv Exp Med Biol*. 2002;511:121-31; discussion 131-4. PMID: 12575759.
- B- Imperato-McGinley J, Zhu YS. Androgens and male physiology the syndrome of 5 alpha- reductase-2 deficiency. *Mol Cell Endocrinol*. 2002 Dec 30;198(1-2):51-9. PMID: 12573814.
- Insel T. Director's Blog: Transforming Diagnosis. April 29, 2013.  
<http://www.nimh.nih.gov/about/director/2013/transforming-diagnosis.shtml>.<sup>6</sup>
- Insel T. The NIMH Research Domain Criteria (RDoC) Project: precision medicine for psychiatry. *Am J Psychiatry*. 2014 Apr;171(4):395-7. PMID: 24687194.
- IOM 2011 Robert Graham (Chair); Committee on Lesbian, Gay, Bisexual, and Transgender Health Issues and Research Gaps and Opportunities. Institute of Medicine (IOM). (Study Sponsor: The National Institutes of Health). The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding. Issued March 31, 2011.  
<http://thefenwayinstitute.org/documents/lgbthealthreportbriefembargoed.pdf>.<sup>7</sup>
- Jackson PA. Thai research on male homosexuality and transgenderism and the cultural limits of Foucaultian analysis. *J Hist Sex*. 1997 Jul;8(1):52-85. PMID: 11619530.
- Jackson, Peter A.. An explosion of Thai identities: peripheral genders and the limits of queer theory. *Culture, Health, & Sexuality*, 2000;2(4):405-24. Taylor & Francis. (Not in PubMed)
- Jackson PA. Pre-gay, post-queer: Thai perspectives on proliferating gender/sex diversity in Asia. *J Homosex*. 2001;40(3-4):1-25. PMID: 11386329.
- Jacobeit J, Gooren L, Schulte H. Safety aspects of 36 months of administration of long-acting intramuscular testosterone undecanoate for treatment of female-to-male transgender individuals. *Eur J Endocrinol*. 2009 Nov;161(5):795-8. Epub 2009 Sep 11. PMID: 19749027.
- Jacobs, S-E, Thomas W, and Lang S (Eds.). (1997). *Two-spirit people: Native American gender identity, sexuality, and spirituality*. Urbana: University of Illinois Press.
- Jain A, Bradbeer C. Gender identity disorder: treatment and post-transition care in transsexual adults. *Int J STD AIDS*. 2007 Mar;18(3):147-50. PMID: 17362542.
- Jarolím L, Sedý J, Schmidt M, Nanka O, Foltán R, Kawaciuk I. Gender reassignment surgery in male-to-female transsexualism: A retrospective 3-month follow-up study with anatomical remarks. *J Sex Med*. 2009 Jun;6(6):1635-44. Epub 2009 Mar 30. PMID: 19473463.

Johansson A, Sundbom E, Höjerback T, Bodlund O. A five-year follow-up study of Swedish adults with gender identity disorder. *Arch Sex Behav*. 2010 Dec;39(6):1429-37. Epub 2009 Oct 9. PMID: 19816764.

Jokić-Begić N, Lauri Korajlija A, Jurin T. Psychosocial adjustment to sex reassignment surgery: a qualitative examination and personal experiences of six transsexual persons in Croatia. *Scientific World Journal*. 2014;2014:960745. Epub 2014 Mar 25. PMID: 24790589.

Joseph A, Shabir I, Marumadi E, Dada R, Ammini A, Mehta M. Psychosexual outcomes in three siblings with partial androgen insensitivity syndrome: impact of nature versus nurture. *J Pediatr Endocrinol Metab*. 2013;26(9-10):915-20. PMID: 23729553.

Judge C, O'Donovan C, Callaghan G, Gaoatswe G, O'Shea D. Gender dysphoria - prevalence and co- morbidities in an Irish adult population. *Front Endocrinol (Lausanne)* 2014;5:87. Epub 2014 Jun 13. PMID: 24982651.

Jürgensen M, Hiort O, Holterhus PM, Thyen U. Gender role behavior in children with XY karyotype and disorders of sex development. *Horm Behav*. 2007 Mar;51(3):443-53. Epub 2007 Jan 12. PMID: 17306800.

Keenan JP, Wheeler MA, Gallup GG Jr, Pascual-Leone A. Self-recognition and the right prefrontal cortex. *Trends Cogn Sci*. 2000 Sep;4(9):338-344. PMID: 10962615.

Kelleher CJ, Cardozo LD, Khullar V, Salvatore S. A new questionnaire to assess the quality of life of urinary incontinent women. *Br J Obstet Gynaecol*. 1997 Dec;104(12):1374-9. PMID: 9422015.

Khan L. Transgender health at the crossroads: legal norms, insurance markets, and the threat of healthcare reform. *Yale J Health Policy Law Ethics*. 2011 Summer;11(2):375-418. PMID: 22136012.

Khandelwal A, Agarwal A, Jiloha RC. A 47,XXY female with gender identity disorder. *Arch Sex Behav*. 2010 Oct;39(5):1021-3. PMID: 20464469.

Knight R. Fragmentation, fluidity, and transformation: nonlinear development in middle childhood. *Psychoanal Study Child*. 2011;65:19-47. PMID: 26027138.

Kockott G, Fahrner EM. Transsexuals who have not undergone surgery: a follow-up study. *Arch Sex Behav*. 1987 Dec;16(6):511-22. PMID: 3426393.

Kockott G, Fahrner EM. Male-to-female and female-to-male transsexuals: a comparison. *Arch Sex Behav*. 1988 Dec;17(6):539-46. PMID: 3223814.

Kohlberg, L. "A Cognitive-Developmental Analysis of Children's Sex-Role Concepts and Attitudes." In E. E. Maccoby (ed.). *The Development of Sex Differences*. Stanford, Calif.: Stanford University Press, 1966.

Kraemer B, Delsignore A, Schnyder U, Hepp U. Body image and transsexualism. *Psychopathology*. 2008;41(2):96-100. Epub 2007 Nov 23. PMID: 18033979.

Krege S, Bex A, Lümme G, Rübber H. Male-to-female transsexualism: a technique, results and long-term follow-up in 66 patients. *BJU Int*. 2001 Sep;88(4):396-402. PMID: 11564029.

Kreukels B, Haraldsen, De Cuypere G, Richter-Appelt H, Gijs L, Cohen-Kettenis P. A European network for the investigation of gender incongruence: the ENIGI initiative. *Eur Psychiatry*. 2012 Aug;27(6):445-50. Epub 2010 Jul 9. PMID: 20620022.

Kröhn W, Bertermann H, Wand H, Wille R. [Transsexualism: a long-term follow-up after sex reassignment surgery (author's transl)]. *Nervenarzt*. 1981 Jan;52(1):26-31. PMID: 7219610.

Kronawitter D, Gooren LJ, Zollver H, Oppelt PG, Beckmann MW, Dittrich R, Mueller A. Effects of transdermal testosterone or oral dydrogesterone on hypoactive sexual desire disorder in transsexual women: results of a pilot study. *Eur J Endocrinol*. 2009 Aug;161(2): 363-8. Epub 2009 Jun 4. PMID: 19497984.

Kruijver FP, Fernández-Guasti A, Fodor M, Kraan EM, Swaab DF. Sex differences in androgen receptors of the human mamillary bodies are related to endocrine status rather than to sexual orientation or transsexuality. *J Clin Endocrinol Metab.* 2001 Feb;86(2):818-27. PMID: 11158052.

Kuiper B, Cohen-Kettenis P. Sex reassignment surgery: a study of 141 Dutch transsexuals. *Arch Sex Behav.* 1988 Oct;17(5):439-57. PMID: 3219066.

Kuhn A, Hildebrand R, Birkhäuser M. Do transsexuals have micturition disorders? *Eur J Obstet Gynecol Reprod Biol.* 2007 Apr;131(2):226-30. Epub 2006 May 5. PMID: 16678333.

Kuhn A, Bodmer C, Stadlmayr W, Kuhn P, Mueller M, Birkhäuser M. Quality of life 15 years after sex reassignment surgery for transsexualism. *Fertil Steril.* 2009 Nov;92(5):1685-1689.e3. Epub

2008 Nov 6. PMID: 18990387.

Kuhn A, Santi A, Birkhäuser M. Vaginal prolapse, pelvic floor function, and related symptoms 16 years after sex reassignment surgery in transsexuals. *Fertil Steril.* 2011 Jun;95(7):2379-82. Epub 2011 Apr 2. PMID: 21458798.

Kunz R, Oxman AD. The unpredictability paradox: review of empirical comparisons of randomised and non-randomised clinical trials. *BMJ.* 1998 Oct 31;317(7167):1185-90. PMID: 9794851.

Kunz R, Vist G, Oxman AD. Randomisation to protect against selection bias in healthcare trials. *Cochrane Database Syst Rev.* 2007 Apr 18;(2):MR000012. Update in: *Cochrane Database Syst Rev.* 2011; (4) MR000012. PMID: 17443633.

Kupfer DJ, Kuhl EA, Regier DA. Two views on the new DSM-5: DSM-5: a diagnostic guide relevant to both primary care and psychiatric practice. *Am Fam Physician.* 2013 Oct 15;88(8):Online. PMID: 24364581.

Kuper LE, Nussbaum R, Mustanski B. Exploring the diversity of gender and sexual orientation identities in an online sample of transgender individuals. *J Sex Res.* 2012;49(2-3):244-54. Epub 2011 Jul 28. PMID: 21797716.

Lader EW, Cannon CP, Ohman EM, Newby LK, Sulmasy DP, Barst RJ, Fair JM, Flather M, Freedman JE, Frye RL, Hand MM, Jesse RL, Van de Werf F, Costa F; American Heart Association. The clinician as investigator: participating in clinical trials in the practice setting: Appendix 2: statistical concepts in study design and analysis. *Circulation.* 2004 Jun 1;109(21):e305-7. PMID: 15173053.

Lament C. Transgender Children: Conundrums and Controversies A Introduction to the Section. *Psychoanal Study Child* 2014;68:13-27. PMID: 26173324.

Lancet Editorial-No Authors . Health of lesbian, gay, bisexual, and transgender populations. *Lancet.* 2011 April 9;377: 1211. PMID:2 1481690.

A - Landén M, Wålinder J, Lambert G, Lundström B. Factors predictive of regret in sex reassignment. *Acta Psychiatr Scand.* 1998 Apr;97(4):284-9. PMID: 9570489.

B – Landén M, Walinder J, Lundstrom B. Clinical characteristics of a total cohort of female and male applicants for sex reassignment: a descriptive study. *Acta Psychiatr Scand* 1998; 97: 189-194.

Lang, S. (1998). *Men as Women, Women as Men: Changing Gender in Native American Cultures*. Austin, TX: University of Texas Press.

Lang RJ, Vernon PE. Dimensionality of the perceived self: the Tennessee Self Concept Scale. *Br J Soc Clin Psychol.* 1977 Nov;16(4):363-71. PMID: 588892.

Lawrence AA. Changes in sexual orientation in six male-to-female (MtF) transsexuals. *Arch Sex Behav.* 1999 Dec;28(6):581-3. PMID:> 10650442.



Lawrence A. Factors associated with satisfaction or regret following male-to-female sex reassignment surgery. *Arch Sex Behav.* 2003 Aug;32(4):299-315. PMID: 12856892.

Lawrence A. Sexuality before and after male-to-female sex reassignment surgery. *Arch Sex Behav.* 2005 Apr;34(2):147-66. PMID: 15803249.

Lawrence A. Patient-reported complications and functional outcomes of male-to-female sex reassignment surgery. *Arch Sex Behav.* 2006 Dec;35(6):717-27. Epub 2006 Nov 16. PMID: 17109225.

A-Lawrence AA. Sexual orientation versus age of onset as bases for typologies (subtypes) for gender identity disorder in adolescents and adults. *Arch Sex Behav.* 2010 Apr;39(2):514-45. Epub 2010 Feb 6. PMID: 20140487.

B-Lawrence AA. Societal individualism predicts prevalence of nonhomosexual orientation in male- to-female transsexualism. *Arch Sex Behav.* 2010 Apr;39(2):573-83. Epub 2008 Dec 9. PMID: 19067152.

Leavitt F, Berger JC, Hoepfner JA, Northrop G. Presurgical adjustment in male transsexuals with and without hormonal treatment. *J Nerv Ment Dis.* 1980 Nov;168(11):693-7. PMID: 6255090.

A-Leclère F, Casoli V, Weigert R. Outcome of Vaginoplasty in Male-to-Female Transgenders: A Systematic Review of Surgical Techniques. *J Sex Med.* 2015 Jul;12(7):1655-6. Epub 2015 Jun 11. PMID: 26096230.

B-Leclère FM, Casoli V, Weigert R. Vaginoplasty in Male-to-Female Transsexual Surgery: A Training Concept Incorporating Dissection Room Experience to Optimize Functional and Cosmetic Results. *J Sex Med.* 2015 Oct;12(10):2074-83. PMID: 26481600.

Leinung M, Urizar M, Patel N, Sood S. Endocrine treatment of transsexual persons: extensive personal experience. *Endocr Pract.* 2013 Jul-Aug;19(4):644-50. PMID: 23512380.

Lief HI, Hubschman L. Orgasm in the postoperative transsexual. *Arch Sex Behav.* 1993 Apr;22 (2):145-55. PMID: 8476334.

Lindemalm G, Körlin D, Uddenberg N. Long-term follow-up of "sex change" in 13 male-to-female transsexuals. *Arch Sex Behav.* 1986 Jun;15(3):187-210. PMID: 3729700.

Lindemalm G, Körlin D, Uddenberg N. Prognostic factors vs. outcome in male-to-female transsexualism. A follow-up study of 13 cases. *Acta Psychiatr Scand.* 1987 Mar;75(3):268-74. PMID: 3591409.

Lindgren TW, Pauly IB. A body image scale for evaluating transsexuals. *Arch Sex Behav.* 1975 Nov;4(6):639-56. PMID: 1212093.

Lioudaki E, Ganotakis ES, Mikhailidis DP, Nair DR. The estrogenic burden on vascular risk in male- to-female transsexuals. *Curr Pharm Des.* 2010;16(34):3815-22. PMID: 21128891

Lobato MI, Koff WJ, Manenti C, da Fonseca Seger D, Salvador J, da Graça Borges Fortes M, Petry AR, Silveira E, Henriques AA. Follow-up of sex reassignment surgery in transsexuals: a Brazilian cohort. *Arch Sex Behav.* 2006 Dec;35(6):711-5. PMID: 17075731.

Lothstein LM. The aging gender dysphoria (transsexual) patient. *Arch Sex Behav.* 1979 Sep;8 (5):431-44. PMID: 496624.

Lothstein LM, Roback H. Black female transsexuals and schizophrenia: a serendipitous finding? *Arch Sex Behav.* 1984 Aug;13(4):371-86. PMID: 6487080.

Lothstein LM. Psychological testing with transsexuals: a 30-year review. *J Pers Assess.* 1984 Oct;48 (5):500-7. PMID: 6389823.

Lundström B, Pauly I, Wålinder J. Outcome of sex reassignment surgery. *Acta Psychiatr Scand.* 1984 Oct;70(4):289-94. PMID: 6388248.

Maccoby EE. The role of gender identity and gender constancy in sex-differentiated development. *New Dir Child Dev.* 1990 Spring;(47):5-20. PMID: 2194142.

Maimoun L, Philibert P, Cammas B, Audran F, Bouchard P, Fenichel P, Cartigny M, Pienkowski C, Polak M, Skordis N, Mazen I, Ocal G, Berberoglu M, Reynaud R, Baumann C, Cabrol S, Simon D,

Kayemba-Kay's K, De Kerdanet M, Kurtz F, Leheup B, Heinrichs C, Tenoutasse S, Van Vliet G, Grüters A, Eunice M, Ammini AC, Hafez M, Hochberg Z, Einaudi S, Al Mawlawi H, Nuñez CJ, Servant N, Lumbroso S, Paris F, Sultan C. Phenotypical, biological, and molecular heterogeneity of 5 $\alpha$ -reductase deficiency: an extensive international experience of 55 patients. *J Clin Endocrinol Metab.* 2011 Feb;96(2):296-307. Epub 2010 Dec 8. PMID: 21147889.

Marks I, Green R, Mataix-Cols D. Adult gender identity disorder can remit. *Compr Psychiatry.* 2000 Jul-Aug;41(4):273-5. PMID: 10929795.

Marshall E, Claes L, Bouman WP, Witcomb GL, Arcelus J. Non-suicidal self-injury and suicidality in trans people: A systematic review of the literature. *Int Rev Psychiatry.* 2015 Sep 2:1-12. [Epub ahead of print]. PMID: 26329283.

Matarazzo B, Barnes S, Pease J, Russell L, Hanson J, Soberay K, Gutierrez P. Suicide risk among lesbian, gay, bisexual, and transgender military personnel and veterans: what does the literature tell us? *Suicide Life Threat Behav.* 2014 Apr;44(2):200-17. Epub 2014 Feb 3. PMID: 24494604.

Mate-Kole C, Freschi M, Robin A. Aspects of psychiatric symptoms at different stages in the treatment of transsexualism. *Br J Psychiatry.* 1988 Apr;152:550-3. PMID: 3167409.

Mate-Kole C, Freschi M, Robin A. A controlled study of psychological and social change after surgical gender reassignment in selected male transsexuals. *Br J Psychiatry.* 1990 Aug;157:261-4. PMID: 2224377.

Maycock L, Kennedy H. Breast care in the transgender individual. *J Midwifery Womens Health.* 2014 Jan-Feb;59(1):74-81. Epub 2013 Nov 13. PMID: 24224502.

McHorney CA, Ware JE, Raczek AE. The MOS 36-Item Short-Form Health Survey (SF-36): II. Psychometric and clinical tests of validity in measuring physical and mental health constructs. *Med Care.* 1993 Mar;31(3):247-63. PMID: 8450681.

McHugh PR, Slavney PR. Mental illness comprehensive evaluation or checklist? *N Engl J Med.* 2012 May 17;366(20):1853-5. PMID: 22591291.

Meads C, Pennant M, McManus J, Bayliss S. West Midlands Health Technology Assessment Collaboration. A systematic review of lesbian, gay, bisexual and transgender health in the West Midlands region of the UK compared to published UK research. *Health Technology Assessment Database.* 2009. No.3. [www.birmingham.ac.uk/Documents/college-mds/haps/projects/WMHTAC/REPreports/2009/LGBTHealth030409finalversion.pdf](http://www.birmingham.ac.uk/Documents/college-mds/haps/projects/WMHTAC/REPreports/2009/LGBTHealth030409finalversion.pdf).

Medraś M, Józków P. Transsexualism diagnostic and therapeutic aspects. *Endokrynol Pol.* 2010 Jul- Aug;61(4):412-6. PMID: 20806188.

Megeri D, Khoosal D. Anxiety and depression in males experiencing gender dysphoria. *Sexual and Relationship Therapy.* 2007 Feb; 22(1):77-81. (Not in PubMed)

Melendez RM, Exner TA, Ehrhardt AA, Dodge B, Remien RH, Rotheram-Borus MJ, Lightfoot M, Hong D. Health and health care among male-to-female transgender persons who are HIV positive. *Am J Public Health.* 2006 Jun;96(6):1034-7. Epub 2005 Aug 30. PMID: 16131645.

Mephram N, Bouman W, Arcelus J, Hayter M, Wylie K. People with gender dysphoria who self- prescribe cross-sex hormones: prevalence, sources, and side effects knowledge. *J Sex Med.* 2014 Dec;11(12):2995-3001. Epub 2014 Sep 11. PMID: 25213018.



- Meriggiola M, Jannini E, Lenzi A, Maggi M, Manieri C. Endocrine treatment of transsexual persons: an Endocrine Society Clinical Practice Guideline: commentary from a European perspective. *Eur J Endocrinol*. 2010 May;162(5):831-3. Epub 2010 Feb 11. PMID: 20150325.
- Meriggiola M, Berra M. Long-term cross-sex hormone treatment is safe in transsexual subjects. *Asian J Androl*. 2012 Nov;14(6):813-4. Epub 2012 Aug 27. PMID: 22922319.
- Meriggiola M, Berra M. Safety of hormonal treatment in transgenders. *Curr Opin Endocrinol Diabetes Obes*. 2013 Dec;20(6):565-9. PMID: 24468759.
- A-Meriggiola MC, Gava G. Endocrine care of transpeople part I. A review of cross-sex hormonal treatments, outcomes and adverse effects in transmen. *Clin Endocrinol (Oxf)*. 2015 Nov;83(5):597-606. Epub 2015 Mar 25. PMID: 25692791.
- B-Meriggiola MC, Gava G. Endocrine care of transpeople part II. A review of cross-sex hormonal treatments, outcomes and adverse effects in transwomen. *Clin Endocrinol (Oxf)*. 2015 Nov;83(5):607- 15. Epub 2015 Mar 25. PMID: 25692882.
- Meyer J, Knorr N, Blumer D. Characterization of a self-designated transsexual population. *Arch Sex Behav* 1971 Sep;1(3):219-30. PMID: 24179067.
- A-Meyer JK. Sex assignment and reassignment: intersex and gender identity disorders. Foreword. *Clin Plast Surg*. 1974 Apr;1(2):199-200. PMID: 4426156.
- B-Meyer JK. Psychiatric considerations in the sexual reassignment of non-intersex individuals. *Clin Plast Surg*. 1974 Apr;1(2):275-83. PMID: 4426161.
- C-Meyer JK, Hoopes JE. The gender dysphoria syndromes. A position statement on so-called "transsexualism". *Plast Reconstr Surg*. 1974 Oct;54(4):444-51. PMID: 4416283.
- D- Meyer JK. Clinical variants among applicants for sex reassignment. *Arch Sex Behav*. 1974 Nov;3 (6):527-58. PMID: 4429437.
- Meyer JK, Reter DJ. Sex reassignment. Follow-up. *Arch Gen Psychiatry*. 1979 Aug;36(9): 1010-5. PMID: 464739.
- Meyer WJ, Finkelstein JW, Stuart CA, Webb A, Smith ER, Payer AF, Walker PA. Physical and hormonal evaluation of transsexual patients during hormonal therapy. *Arch Sex Behav*. 1981 Aug;10 (4):347-56. PMID: 6794543.
- Meyer WJ, Webb A, Stuart CA, Finkelstein JW, Lawrence B, Walker PA. Physical and hormonal evaluation of transsexual patients: a longitudinal study. *Arch Sex Behav* 1986 Apr;15(2):121-38. PMID: 22051002.
- Meyer-Bahlburg HF. Gender outcome in 46,XY complete androgen insensitivity syndrome: comment on T'Sjoen et al. (2010). *Arch Sex Behav*. 2010 Dec;39(6):1221-4. PMID: 20552263.
- Meyer-Bahlburg HF. Gender monitoring and gender reassignment of children and adolescents with a somatic disorder of sex development. *Child Adolesc Psychiatr Clin N Am*. 2011 Oct;20(4):639-49. PMID: 22051002. Epub 2011 Sep 23.
- Miach PP, Berah EF, Butcher JN, Rouse S. Utility of the MMPI-2 in assessing gender dysphoric patients. *J Pers Assess*. 2000 Oct;75(2):268-79. PMID: 11020144.
- Michel A, Mormont C, Legros JJ. A psycho-endocrinological overview of transsexualism. *Eur J Endocrinol*. 2001 Oct;145(4):365-76. PMID: 11580991.
- Michel A, Ansseau M, Legros J, Pitchot W, Cornet J, Mormont C. Comparisons of two groups of sex-change applicants based on the MMPI. *Psychol Rep* 2002 Aug;91(1):233-40. PMID: 12353786.
- Miles C, Green R, Hines M. Estrogen treatment effects on cognition, memory and mood in male-to- female transsexuals. *Horm Behav*. 2006 Dec;50(5):708-17. Epub 2006 Aug 1. PMID: 16884726.

Miller FG, Brody H. A critique of clinical equipoise: Therapeutic misconception in the ethics of clinical trials. *Hastings Center Report*. 2003; May-June. Report 33, No. 3: 19-28. PMID: 12854452.

Miller FG. Equipoise and the Ethics of Clinical Research Revisited. *The American Journal of Bioethics*. 2006; 6:4, 59-61. PMID: 16885110.

Miller PB, Weijer C. Trust based obligations of the state and physician-researchers to patient- subjects. *J Med Ethics*. 2006 Sep;32(9):542-7. PMID: 16943338.

A-Moher D, Hopewell S, Schulz KF, Montori V, Gøtzsche PC, Devereaux PJ, Elbourne D, Egger M, Altman DG. CONSORT 2010 explanation and elaboration: updated guidelines for reporting parallel group randomised trials. *BMJ*. 2010 Mar 23;340:c869. PMID: 20332511.

B-Moher D, Hopewell S, Schulz KF, Montori V, Gøtzsche PC, Devereaux PJ, Elbourne D, Egger M, Altman DG; Consolidated Standards of Reporting Trials Group. CONSORT 2010 Explanation and elaboration: Updated guidelines for reporting parallel group randomised trials. *J Clin Epidemiol*. 2010 Aug;63(8):e1-37. Epub 2010 Mar 25. Erratum in *J Clin Epidemiol*. 2012 Mar;65(3):351. PMID: 20346624.

Monstrey S, Hoebeke P, Selvaggi G, Ceulemans P, Van Landuyt K, Blondeel P, Hamdi M, Roche N, Weyers S, De Cuyper G. Penile reconstruction: is the radial forearm flap really the standard technique? *Plast Reconstr Surg*. 2009 Aug;124(2):510-8. PMID: 19644267.

Monstrey S, Ceulemans P, Hoebeke P. Sex Reassignment Surgery in the Female-to-Male Transsexual. *Semin Plast Surg*. 2011 Aug;25(3):229-44. PMID: 22851915.

Moreno-Pérez O, Esteva De Antonio I; Grupo de Identidad y Diferenciación Sexual de la SEEN (GIDSEEN). [Clinical practice guidelines for assessment and treatment of transsexualism. SEEN Identity and Sexual Differentiation Group (GIDSEEN)]. *Endocrinol Nutr*. 2012 Jun-Jul;59(6):367-82. Epub 2012 Apr 26. Spanish. PMID: 22542505.

Moser C. Blanchard's Autogynephilia Theory: a critique. *J Homosex*. 2010;57(6):790-809. PMID: 20582803.

Motmans J, Meier P, Ponnet K, T'Sjoen G. Female and male transgender quality of life: socioeconomic and medical differences. *J Sex Med*. 2012 Mar;9(3):743-50. Epub 2011 Dec 21. PMID: 22188877.

Motmans J, Ponnet K, De Cuyper G. Sociodemographic characteristics of trans persons in Belgium: A secondary data analysis of medical, state, and social data. *Arch Sex Behav*. 2015 Jul;44(5):1289-99. Epub 2014 Oct 10. PMID: 25300904.

Mueller A, Haeberle L, Zollner H, Claassen T, Kronawitter D, Oppelt P, Cupisti S, Beckmann M, Dittich R. Effects of intramuscular testosterone undecanoate on body composition and bone mineral density in female-to-male transsexuals. *J Sex Med*. 2010 Sep;7(9):3190-8. PMID: 20584125.

Murad MH, Elamin MB, Garcia MZ, Mullan RJ, Murad A, Erwin PJ, Montori VM. Hormonal therapy and sex reassignment: a systematic review and meta-analysis of quality of life and psychosocial outcomes. *Clin Endocrinol (Oxf)*. 2010 Feb;72(2):214-31. Epub 2009 May 16. PMID: 19473181.

Nanda S. The hijras of India: cultural and individual dimensions of an institutionalized third gender role. *J Homosex*. 1985 Summer;11(3-4):35-54. PMID: 4093603.

Nanda, S. (1999). *Neither man nor woman: The hijras of India*. Belmont, CA: Wadsworth Publishing.

Nanda S. (2014, 2nd edition) *Gender Diversity: Cross cultural variations*. Long Grove, IL: Waveland Press.

NIH FY 2016-2020 Strategic Plan to Advance Research on the Health and Well-being of Sexual and Gender Minorities. 2015 [http://edi.nih.gov/sites/default/files/EDI\\_Public\\_files/sgm-strategic-plan.pdf](http://edi.nih.gov/sites/default/files/EDI_Public_files/sgm-strategic-plan.pdf)

NIH-LGBT 2013: National Institutes of Health Lesbian, Gay, Bisexual, and Transgender (LGBT) Research Coordinating Committee. Consideration of the Institute of Medicine (IOM) report on the health of lesbian, gay, bisexual, and transgender (LGBT) individuals. Bethesda, MD: National Institutes of Health; 2013.  
[http://report.nih.gov/UploadDocs/LGBT%20Health%20Report\\_FINAL\\_2013-01-03-508%20compliant.pdf](http://report.nih.gov/UploadDocs/LGBT%20Health%20Report_FINAL_2013-01-03-508%20compliant.pdf).

Nemoto T, Iwamoto M, Perngparn U, Areesantichai C, Kamitani E, Sakata M. HIV-related risk behaviors among kathoey (male-to-female transgender) sex workers in Bangkok, Thailand. *AIDS Care*. 2012;24(2):210-9. Epub 2011 Jul 25. PMID: 21780964.

Newfield E, Hart S, Dibble S, Kohler L. Female-to-male transgender quality of life. *Qual Life Res*. 2006 Nov;15(9):1447-57. Epub 2006 Jun 7. PMID: 16758113.

Newsom J. Latent variable. *USP 655 SEM. Winter 2015*. (Portland State quantitative methods)  
[www.upa.pdx.edu/IOA/newsom/semclass/ho\\_latent.pdf](http://www.upa.pdx.edu/IOA/newsom/semclass/ho_latent.pdf).<sup>5</sup>

Nieder T, Herff M, Cerwenka S, Preuss W, Cohen-Kettenis P, De Cuypere G, Haraldsen I, Richter-Appelt H. Age of onset and sexual orientation in transsexual males and females. *J Sex Med*. 2011 Mar;8(3):783-91. Epub 2010 Dec 8. PMID: 21143416.

Nuttbrock L, Hwahng S, Bockting W, Rosenblum A, Mason M, Macri M, Becker J. Lifetime risk factors for HIV/sexually transmitted infections among male-to-female transgender persons. *J Acquir Immune Defic Syndr*. 2009 Nov 1;52(3):417-21. PMID: 19550351.

Nuttbrock L, Bockting W, Rosenblum A, Hwahng S, Mason M, Macri M, Becker J. Gender abuse, depressive symptoms, and HIV and other sexually transmitted infections among male-to-female transgender persons: a three-year prospective study. *Am J Public Health* 2013 Feb;103(2):300-7. Epub 2012 Jun 14. Erratum in: *Am J Public Health*. 2015 Feb;105(2):e5. PMID: 22698023.

NZHTA 2002: Day P. Tech Brief Series. *Trans-gender reassignment surgery*. New Zealand Health technology Assessment. (NZHTA). The clearinghouse for health outcomes and health technology assessment. February 2002 Volume 1 Number 1. [http://nzhta.chmeds.ac.nz/publications/trans\\_gender.pdf](http://nzhta.chmeds.ac.nz/publications/trans_gender.pdf).<sup>6</sup>

Odgaard-Jensen J, Vist GE, Timmer A, Kunz R, Akl EA, Schünemann H, Briel M, Nordmann AJ, Pregno S, Oxman AD. Randomisation to protect against selection bias in healthcare trials. *Cochrane Database Syst Rev*. 2011 Apr 13; (4):MR000012. PMID: 21491415.

O'Gorman EC. A preliminary report on transsexualism in Northern Ireland. *Ulster Med J*. 1981;50 (1):46-9. PMID: 7233635.

Okabe N, Sato T, Matsumoto Y, Ido Y, Terada S, Kuroda S. Clinical characteristics of patients with gender identity disorder at a Japanese gender identity disorder clinic. *Psychiatry Res*. 2008 Jan 15;157 (1-3):315-8. Epub 2007 Oct 23. PMID: 17959255.

Olson J, Forbes C, Belzer M. Management of the transgender adolescent. *Arch Pediatr Adolesc Med*. 2011 Feb;165(2):171-6. PMID: 21300658.

Olsson SE, Jansson I, Moller A. Men as women. Experiences from five case after administrative, hormonal, and surgical treatment. *Nord J Psychiatry*. 1996;50(5):395-9. (Not in PubMed)

Olsson S, Möller A. On the incidence and sex ratio of transsexualism in Sweden, 1972-2002. *Arch Sex Behav*. 2003 Aug;32(4):381-6. PMID: 12856899.

Olsson S, Möller A. Regret after sex reassignment surgery in a male-to-female transsexual: a long-term follow-up. *Arch Sex Behav*. 2006 Aug;35(4):501-6. Epub 2006 Aug 11. PMID: 16900416.

Operario D, Nemoto T. HIV in transgender communities: syndemic dynamics and a need for multicomponent interventions. *J Acquir Immune Defic Syndr*. 2010 Dec;55 Suppl 2:S91-3. PMID: 21406995.

Operario D, Nemoto T, Iwamoto M, Moore T. Unprotected sexual behavior and HIV risk in the context of primary partnerships for transgender women. *AIDS Behav*. 2011 Apr;15(3):674-82. PMID: 21604064.

Orel N. Investigating the needs and concerns of lesbian, gay, bisexual, and transgender older adults: the use of qualitative and quantitative methodology. *J Homosex*. 2014;61(1):53-78. PMID: 24313253.

Oster JM, Shastri P, Geyer C. Cerebral venous sinus thrombosis after gender reassignment surgery. *Gend Med*. 2010 Jun;7(3):270-5. PMID: 20638632.

Ott J, van Trotsenburg M, Kaufmann U, Schrögender K, Haslik W, Huber JC, Wenzl R. Combined hysterectomy/salpingo-oophorectomy and mastectomy is a safe and valuable procedure for female-to- male transsexuals. *J Sex Med*. 2010 Jun;7(6):2130-8. Epub 2010 Mar 3. PMID: 20233279.

Paap MC, Meijer RR, Cohen-Kettenis PT, Richter-Appelt H, de Cuypere G, Kreukels BP, Pedersen G, Karterud S, Malt UF, Haraldsen IR. Why the factorial structure of the SCL-90-R is unstable: comparing patient groups with different levels of psychological distress using Mokken Scale Analysis. *Psychiatry Res*. 2012 Dec 30;200(2-3):819-26. Epub 2012 Apr 9. PMID: 22494703.

Palmer D, Dietsch A, Searl J. Endoscopic and stroboscopic presentation of the larynx in male-to- female transsexual persons. *J Voice*. 2012 Jan;26(1):117-26. Epub 2011 Apr 7. PMID: 21477987.

Palmer JR, Wise LA, Robboy SJ, Titus-Ernstoff L, Noller KL, Herbst AL, Troisi R, Hoover RN. Hypospadias in sons of women exposed to diethylstilbestrol in utero. *Epidemiology*. 2005 Jul;16 (4):583-6. PMID: 15951681.

Palmer JR, Herbst AL, Noller KL, Boggs DA, Troisi R, Titus-Ernstoff L, Hatch EE, Wise LA, Strohsnitter WC, Hoover RN. Urogenital abnormalities in men exposed to diethylstilbestrol in utero: a cohort study. *Environ Health*. 2009 Aug 18;8:37. PMID: 19689815.

Pauly IB. The current status of the change of sex operation. *J Nerv Ment Dis*. 1968 Nov;147(5):460- 71. PMID: 5726920.

Pauly IB. Outcome of sex reassignment surgery for transsexuals. *Aust N Z J Psychiatry* 1981 Mar;15 (1):45-51. PMID: 6942832.

Pelusi C, Costantino A, Martelli V, Lambertini M, Bazzocchi A, Ponti F, Battista G, Venturoli S, Meriggiola M. Effects of three different testosterone formulations in female-to-male transsexual persons. *J Sex Med*. 2014 Dec;11(12):3002-11. Epub 2014 Sep 24. PMID: 25250780.

Perez KM, Titus-Ernstoff L, Hatch EE, Troisi R, Wactawski-Wende J, Palmer JR, Noller K, Hoover RN; National Cancer Institute's DES Follow-up Study Group. Reproductive outcomes in men with prenatal exposure to diethylstilbestrol. *Fertil Steril*. 2005 Dec;84(6):1649-56. PMID: 16359959.

Perrone A, Cerpolini S, Maria Salfi N, Ceccarelli C, De Giorgi L, Formelli G, Casadio P, Ghi T, Pelusi G, Pelusi C, Meriggiola M. Effect of long-term testosterone administration on the endometrium of female-to-male (FtM) transsexuals. *J Sex Med*. 2009 Nov;6(11):3193-200. Epub 2009 Jun 29. PMID: 19570144.

Persson D. Unique challenges of transgender aging: implications from the literature. *J Gerontol Soc Work*. 2009 Aug-Sep;52(6):633-46. PMID: 19598043.

Phillips J, Frances A, Cerullo MA, Chardavoyne J, Decker HS, First MB, Ghaemi N, Greenberg G, Hinderliter AC, Kinghorn WA, LoBello SG, Martin EB, Mishara AL, Paris J, Pierre JM, Pies RW, Pincus HA, Porter D, Pouncey C, Schwartz MA, Szasz T, Wakefield JC, Waterman GS, Whooley O, Zachar P. The six most essential questions in psychiatric diagnosis: a plialogue part 1: conceptual and definitional issues in psychiatric diagnosis. *Philos Ethics Humanit Med*. 2012 Jan 13;7:3. PMID: 22243994.

Phillips J, Frances A, Cerullo MA, Chardavoyne J, Decker HS, First MB, Ghaemi N, Greenberg G, Hinderliter AC, Kinghorn WA, LoBello SG, Martin EB, Mishara AL, Paris J, Pierre JM, Pies RW, Pincus HA, Porter D, Pouncey C, Schwartz MA, Szasz T, Wakefield JC, Waterman GS, Whooley O, Zachar P. The six most essential questions in psychiatric diagnosis: a pluralogue part 2: Issues of conservatism and pragmatism in psychiatric diagnosis. *Philos Ethics Humanit Med*. 2012 Jul 5;7:8. PMID: 22512887.

Phillips J, Frances A, Cerullo MA, Chardavoyne J, Decker HS, First MB, Ghaemi N, Greenberg G, Hinderliter AC, Kinghorn WA, LoBello SG, Martin EB, Mishara AL, Paris J, Pierre JM, Pies RW, Pincus HA, Porter D, Pouncey C, Schwartz MA, Szasz T, Wakefield JC, Waterman GS, Whooley O, Zachar P. The six most essential questions in psychiatric diagnosis: a pluralogue part 3: issues and alternative approaches in psychiatric diagnosis. *Philos Ethics Humanit Med*. 2012 May 23;7:9. PMID: 22621419.

Phillips J, Frances A, Cerullo MA, Chardavoyne J, Decker HS, First MB, Ghaemi N, Greenberg G, Hinderliter AC, Kinghorn WA, LoBello SG, Martin EB, Mishara AL, Paris J, Pierre JM, Pies RW, Pincus HA, Porter D, Pouncey C, Schwartz MA, Szasz T, Wakefield JC, Waterman GS, Whooley O, Zachar P. The six most essential questions in psychiatric diagnosis: a pluralogue. Part 4: general conclusion. *Philos Ethics Humanit Med*. 2012 Dec 18;7:14. PMID: 23249629.

PRO Guidance 2009: U.S. Department of Health and Human Services; Food and Drug Administration, Center for Drug Evaluation and Research (CDER), Center for Biologics Evaluation and Research (CBER), Center for Devices and Radiological Health (CDRH). *Guidance for Industry. Patient-reported outcome measures: Use in medical product development to support labeling claims. December 2009.* <http://www.fda.gov/downloads/Drugs/.../Guidances/UCM193282.pdf>.<sup>67</sup>

Quirós C, Patrascioiu I, Mora M, Aranda GB, Hanzu FA, Gómez-Gil E, Godás T, Halperin I. Effect of cross-sex hormone treatment on cardiovascular risk factors in transsexual individuals. Experience in a specialized unit in Catalonia. *Endocrinol Nutr*. 2015 May;62(5):210-6. Epub 2015 Mar 16. PMID: 25790747.

Rachlin Katherine. Factors Which Influence Individual's Decisions When Considering Female-To- Male Genital Reconstructive Surgery. *IJT*. 1999 Jul-Sept;3(3). (Not in PubMed) <http://www.symposion.com/ijt/ijt990302.htm> <http://www.iiav.nl/ezines/web/ijt/97-03/numbers/symposion/ijt990302.htm>

Rakic Z, Starcevic V, Maric J, Kelin K. The outcome of sex reassignment surgery in Belgrade: 32 patients of both sexes. *Arch Sex Behav*. 1996 Oct;25(5):515-25. PMID: 8899143.

A-Rametti G, Carrillo B, Gómez-Gil E, Junque C, Segovia S, Gomez Á, Guillamon A. White matter microstructure in female to male transsexuals before cross-sex hormonal treatment. A diffusion tensor imaging study. *J Psychiatr Res*. 2011 Feb;45(2):199-204. Epub 2010 Jun 8. PMID: 20562024.

B-Rametti G, Carrillo B, Gómez-Gil E, Junque C, Zubiarre-Elorza L, Segovia S, Gomez Á, Guillamon A. The microstructure of white matter in male to female transsexuals before cross-sex hormonal treatment. A DTI study. *J Psychiatr Res*. 2011 Jul;45(7):949-54. Epub 2010 Dec 30. PMID: 21195418.

Randell JB. Transvestitism and trans-sexualism. A study of 50 cases. *Br Med J*. 1959 Dec 26; 2 (5164): 1448-52. PMID: 14436154.

Randell J. Indications for reassignment surgery. *Archives of Sexual Behavior*. 1971; 1(2):153-61. (Not in PubMed)

Randell J. (1969). *Pre-operative and post-operative status of transsexuals* (Chapter 26) in Green R, Money J (eds):Transsexualism and Sex reassignment. Baltimore: Johns Hopkins Press.

Rappaport R. Intersex management: what is achieved and what is needed. Commentary to Thyen et al.: epidemiology and initial management of ambiguous genitalia at birth in Germany (*Horm Res*. 2006;66:195-203). *Horm Res*. 2006;66(4):204-5. Epub 2006 Jul 27. PMID: 16877871.

Reed HM. Aesthetic and functional male to female genital and perineal surgery: feminizing vaginoplasty. *Semin Plast Surg*. 2011 May;25(2):163-74. PMID: 22547974.

Rehman J, Lazer S, Benet AE, Schaefer LC, Melman A. The reported sex and surgery satisfactions of 28 postoperative male-to-female transsexual patients. *Arch Sex Behav*. 1999 Feb;28(1):71-89. PMID: 10097806.

Reisner S, Poteat T, Keatley J, Cabral M, Mothopeng T, Dunham E, Holland C, Max R, Baral S. Global health burden and needs of transgender populations: a review. *Lancet*. Epub 16 June 2016. [http://dx.doi.org/10.1016/S0140-6736\(16\)00684-X](http://dx.doi.org/10.1016/S0140-6736(16)00684-X)

Roback HB, Lothstein LM. The female mid-life sex change applicant: a comparison with younger female transsexuals and older male sex change applicants. *Arch Sex Behav*. 1986 Oct;15(5):401-15. PMID: 3789904.

Roscoe W. (1991). *The Zuni Man-Woman*. Albuquerque: University of New Mexico Press.

Roscoe, W. (1998). *Changing Ones: Third and Fourth Genders in Native North America*. New York: St. Martin's Press.

Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R, Ferguson D, D'Agostino R Jr. The Female Sexual Function Index (FSFI): a multidimensional self-report instrument for the assessment of female sexual function. *J Sex Marital Ther*. 2000 Apr-Jun;26(2):191-208. PMID: 10782451.

Rosenberg, M. (1965). *Society and the Adolescent Self-Image*, Princeton University Press, Princeton.

Ross MW, Wålinder J, Lundström B, Thuwe I. Cross-cultural approaches to transsexualism. A comparison between Sweden and Australia. *Acta Psychiatr Scand*. 1981 Jan;63(1):75-82. PMID: 7234467.

Ross MW, Need JA. Effects of adequacy of gender reassignment surgery on psychological adjustment: a follow-up of fourteen male-to-female patients. *Arch Sex Behav*. 1989 Apr;18(2):145-53. PMID: 2712690.

Rubin SO. Sex-reassignment surgery male-to-female. Review, own results and report of a new technique using the glans penis as a pseudoclitoris. *Scand J Urol Nephrol Suppl*. 1993;154:1-28. PMID: 8140401.

Ruppin U, Pfäfflin F. Long-term follow-up of adults with gender identity disorder. *Arch Sex Behav*. 2015 Jul;44(5):1321-9. Epub 2015 Feb 18. PMID: 25690443.

Russell ST, Ryan C, Toomey RB, Diaz RM, Sanchez J. Lesbian, gay, bisexual, and transgender adolescent school victimization: implications for young adult health and adjustment. *J Sch Health*. 2011 May;81(5):223-30. PMID: 21517860.

Safer J, Tangpricha V. Out of the shadows: it is time to mainstream treatment for transgender patients. *Endocr Pract*. 2008 Mar;14(2):248-50. PMID: 18308667.

Salkind MR. Beck depression inventory in general practice. *J R Coll Gen Pract*. 1969 Nov;18 (88):267-71. PMID: 5350525.

Salvador J, Massuda R, Andreazza T, Koff WJ, Silveira E, Kreische F, de Souza L, de Oliveira MH, Rosito T, Fernandes BS, Lobato MI. Minimum 2-year follow up of sex reassignment surgery in Brazilian male-to-female transsexuals. *Psychiatry Clin Neurosci*. 2012 Jun;66(4):371-2. PMID: 22624747.

Savic I, Garcia-Falgueras A, Swaab DF. Sexual differentiation of the human brain in relation to gender identity and sexual orientation. *Prog Brain Res*. 2010;186:41-62. PMID: 21094885.

Schaeffer CE. The Kutenai female berdache: Courier, guide, prophetess, and warrior. *Ethnohistory*. 1965;12 (3): 193-236. (Not in PubMed)

Schlatterer K, Yassouridis A, von Werder K, Poland D, Kemper J, Stalla GK. A follow-up study for estimating the effectiveness of a cross-gender hormone substitution therapy on transsexual patients. *Arch Sex Behav*. 1998 Oct;27(5):475-92. PMID: 9795728.

Schroder M, Carroll RA. New women: Sexological outcomes of male-to-female gender reassignment surgery. *JSET*. 1999;24(3):137-46. (Not in PubMed)



Seal L, Franklin S, Richards C, Shishkareva A, Sinclair C, Barrett J. Predictive markers for mastoplasmy and a comparison of side effect profiles in transwomen taking various hormonal regimens. *J Clin Endocrinol Metab.* 2012 Dec;97(12):4422-8. Epub 2012 Oct 9. PMID: 23055547.

Selvaggi G, Monstrey S, Ceulemans P, T'Sjoen G, De Cuypere G, Hoebeke P. Genital sensitivity after sex reassignment surgery in transsexual patients. *Ann Plast Surg.* 2007 Apr;58(4):427-33. PMID: 17413887.

Selvaggi G, Bellringer J. Gender reassignment surgery: an overview. *Nat Rev Urol.* 2011 May;8 (5):274-82. Epub 2011 Apr 12. PMID: 21487386.

Selvaggi G, Dhejne C, Landen M, Elander A. The 2011 WPATH Standards of Care and Penile Reconstruction in Female-to-Male Transsexual Individuals. *Adv Urol.* 2012;2012:581712. Epub 2012 May 14. PMID: 22654902.

Shao T, Grossbard ML, Klein P. Breast cancer in female-to-male transsexuals: two cases with a review of physiology and management. *Clin Breast Cancer.* 2011 Dec;11(6):417-9. Epub 2011 Aug 10. PMID: 21831723.

Shechner T. Gender identity disorder: a literature review from a developmental perspective. *Isr J Psychiatry Relat Sci.* 2010;47(2):132-8. PMID: 20733256.

Shields J, Cohen R, Glassman J, Whitaker K, Franks H, Bertolini I. Estimating population size and demographic characteristics of lesbian, gay, bisexual, and transgender youth in middle school. *J Adolesc Health.* 2013 Feb;52(2):248-50. Epub 2012 Aug 15. PMID: 23332492.

Simopoulos E, Khin Khin E. Fundamental principles inherent in the comprehensive care of transgender inmates. *J Am Acad Psychiatry Law.* 2014;42(1):26-36. PMID: 24618516.

Slabbekoorn D, van Goozen SH, Sanders G, Gooren LJ, Cohen-Kettenis PT. The dermatoglyphic characteristics of transsexuals: is there evidence for an organizing effect of sex hormones. *Psychoneuroendocrinology.* 2000 May;25(4):365-75. PMID: 10725613.

Slabbekoorn D., Van Goozen S., Gooren L., Cohen-Kettenis P. Effects of Cross-Sex Hormone Treatment on Emotionality in Transsexuals. *IJT.* 2001 Jul-Sept; 5(3):20 pages.[http://www.symposion.com/ijt/ijtvo05no03\\_02.htm](http://www.symposion.com/ijt/ijtvo05no03_02.htm).

Slaby RG, Frey KS. Development of gender constancy and selective attention to same-sex models. *Child Dev.* 1975 Dec;46(4):849-56. PMID: 1201664.

Smilkstein G. The family APGAR: a proposal for a family function test and its use by physicians. *J Fam Pract.* 1978 Jun;6(6):1231-9. PMID: 660126.

Smilkstein G, Ashworth C, Montano D. Validity and reliability of the family APGAR as a test of family function. *J Fam Pract.* 1982 Aug;15(2):303-11. PMID:7097168.

Smith YL, van Goozen SH, Cohen-Kettenis PT. Adolescents with gender identity disorder who were accepted or rejected for sex reassignment surgery: a prospective follow-up study. *J Am Acad Child Adolesc Psychiatry.* 2001 Apr;40(4):472-81. PMID: 11314574.

A-Smith YL, Van Goozen SH, Kuiper AJ, Cohen-Kettenis PT. Sex reassignment: outcomes and predictors of treatment for adolescent and adult transsexuals. *Psychol Med.* 2005 Jan;35(1):89-99. PMID: 15842032.

B-Smith Y, van Goozen S, Kuiper A, Cohen-Kettenis P. Transsexual subtypes: clinical and theoretical significance. *Psychiatry Res.* 2005 Dec 15;137(3):151-60. Epub 2005 Nov 17. PMID: 16298429.

A-Sørensen T. A follow-up study of operated transsexual males. *Acta Psychiatr Scand.* 1981 May;63 (5):486-503. PMID: 7315491.

B-Sørensen T. A follow-up study of operated transsexual females. *Acta Psychiatr Scand.* 1981 Jul;64 (1):50-64. PMID: 7315494.

Sørensen T, Hertoft P. Male and female transsexualism: the Danish experience with 37 patients. *Arch Sex Behav* 1982 Apr;11(2):133-55. PMID: 7125885.

Steensma TD, McGuire JK, Kreukels BP, Beekman AJ, Cohen-Kettenis PT. Factors associated with desistence and persistence of childhood gender dysphoria: a quantitative follow-up study. *J Am Acad Child Adolesc Psychiatry*. 2013 Jun;52(6):582-90. Epub 2013 May 3. PMID: 23702447.

Stieglitz KA. Development, risk, and resilience of transgender youth. *J Assoc Nurses AIDS Care*. 2010 May-Jun;21(3):192-206 Epub 2010 Mar 29. PMID: 20347346.

Steinle K. Hormonal management of the female-to-male transgender patient. *J Midwifery Womens Health*. 2011 May-Jun;56(3):293-302. PMID: 21535376.

Stephens SC, Bernstein KT, Philip SS. Male to female and female to male transgender persons have different sexual risk behaviors yet similar rates of STDs and HIV. *AIDS Behav*. 2011 Apr;15(3):683-6. PMID: 20694509.

Stinson B. A study of twelve applicants for transsexual surgery. *Ohio State Med J*. 1972 Mar;68 (3):245-9. PMID: 4401539.

Stojanovic B, Djordjevic ML. Anatomy of the clitoris and its impact on neophalloplasty (metoidioplasty) in female transgenders. *Clin Anat*. 2015 Apr;28(3):368-75. Epub 2015 Mar 4. PMID: 25740576.

Strauss B, Richter-Appelt H (1995) *Fragebogen zur Beurteilung des eigenen Körpers (FBeK), Handanweisung*. Hogrefe, Göttingen Bern Toronto Seattle.

Stroumsa D. The state of transgender health care: policy, law, and medical frameworks. *Am J Public Health* . 2014 Mar;104(3):e31-8. Epub 2014 Jan 16. PMID: 24432926.

Sultan B. Transsexual prisoners: how much treatment is enough? *New Engl Law Rev*. 2003 Summer;37(4):1195-230. PMID: 15295855.

Sundbom E, Bodlund O. Prediction of outcome in transsexualism by means of the Defense Mechanism Test and multivariate modeling: a pilot study. *Percept Mot Skills*. 1999 Feb;88(1):3-20. PMID: 10214627.

Swaab DF. Sexual differentiation of the human brain: relevance for gender identity, transsexualism and sexual orientation. *Gynecol Endocrinol*. 2004 Dec;19(6):301-12. PMID: 15724806.

Swaab DF, Garcia-Falgueras A. Sexual differentiation of the human brain in relation to gender identity and sexual orientation. *Funct Neurol*. 2009 Jan-Mar;24(1):17-28. PMID: 19403051.

Terada S, Matsumoto Y, Sato T, Okabe N, Kishimoto Y, Uchitomi Y. Suicidal ideation among patients with gender identity disorder. *Psychiatry Res*. 2011 Nov 30;190(1):159-62. Epub 2011 May 25. PMID: 21612827.

Terada S, Matsumoto Y, Sato T, Okabe N, Kishimoto Y, Uchitomi Y. Factors predicting psychiatric co-morbidity in gender-dysphoric adults. *Psychiatry Res*. 2012 Dec 30;200(2-3):469-74. Epub 2012 Aug 9. PMID: 22884214.

Titus-Ernstoff L, Perez K, Hatch EE, Troisi R, Palmer JR, Hartge P, Hyer M, Kaufman R, Adam E, Strohsnitter W, Noller K, Pickett KE, Hoover R. Psychosexual characteristics of men and women exposed prenatally to diethylstilbestrol. *Epidemiology*. 2003 Mar;14(2):155-60. PMID: 12606880.

Torres A, Gómez-Gil E, Vidal A, Puig O, Boget T, Salamero M. Gender differences in cognitive functions and influence of sex hormones. *Actas Esp Psiquiatr*. 2006 Nov-Dec;34(6):408-15. Spanish. PMID: 17117339.

Tourbach SA, Hunter-Smith D, Morrison WA. Long anterior urethral reconstruction using a jejunal free flap. *J Plast Surg Hand Surg*. 2011 Feb;45(1):54-6. PMID: 21446801.



- Traish AM, Gooren LJ. Safety of physiological testosterone therapy in women: lessons from female- to-male transsexuals (FMT) treated with pharmacological testosterone therapy. *J Sex Med*. 2010 Nov;7(11):3758-64. Epub 2010 Aug 16. PMID: 20722789.
- Trentacosti AM. *Epoietin alpha: FDA overview of patient reported outcome (PRO) claims*. 2007. [www.fda.gov/ohrms/dockets/ac/07/slides/2007-4315s1-09-FDA-Trentacosti.ppt](http://www.fda.gov/ohrms/dockets/ac/07/slides/2007-4315s1-09-FDA-Trentacosti.ppt).<sup>67</sup>
- Trum H, Hoebeke P, Gooren L. Sex reassignment of transsexual people from a gynecologist's and urologist's perspective. *Acta Obstet Gynecol Scand*. 2015 Jun;94(6):563-7. Epub 2015 Mar 29. PMID: 25721104.
- T'Sjoen G, Weyers S, Taes Y, Lapauw B, Toye K, Goemaere S, Kaufman J. Prevalence of low bone mass in relation to estrogen treatment and body composition in male-to-female transsexual persons. *J Clin Densitom*. 2009 Jul-Sep;12(3):306-13. Epub 2009 Jan 3. PMID: 19121966.
- T'Sjoen G, De Cuypere G, Monstrey S, Hoebeke P, Freedman F, Appari M, Holterhus P, Van Borsel J, Cools M. Male gender identity in complete androgen insensitivity syndrome. *Arch Sex Behav*. 2011 Jun;40(3):635-8. Epub 2010 Apr 1. PMID: 20358272.
- T'Sjoen G, Van Caenegem E, Wierckx K. Transgenderism and reproduction. *Curr Opin Endocrinol Diabetes Obes*. 2013 Dec;20(6):575-9. PMID: 24468761.
- Tsoi WF, Kok LP, Long FY. Male transsexualism in Singapore: a description of 56 cases. *Br J Psychiatry*. 1977 Oct;131:405-9. PMID: 922268.
- Tsoi WF. The prevalence of transsexualism in Singapore. *Acta Psychiatr Scand*. 1988 Oct;78 (4):501-4. PMID: 3265846.
- Tsoi WF. Male and female transsexuals: a comparison. *Singapore Med J*. 1992 Apr;33(2):182-5. PMID: 1621125.
- Tsoi WF. Follow-up study of transsexuals after sex-reassignment surgery. *Singapore Med J*. 1993 Dec;34(6):515-7. PMID: 8153713.
- Tsoi WF, Kok LP, Yeo KL, Ratnam SS. Follow-up study of female transsexuals. *Ann Acad Med Singapore*. 1995 Sep;24(5):664-7. PMID: 8579306.
- Tsushima WT, Wedding D. MMPI results of male candidates for transsexual surgery. *J Pers Assess*. 1979. Aug;43(4):385-7. PMID: 383946.
- Tugnet N, Goddard JC, Vickery RM, Khoosal D, Terry TR. Current management of male-to-female gender identity disorder in the UK. *Postgrad Med J*. 2007 Oct;83(984):638-42. PMID: 17916872.
- Udeze B, Abdelmawla N, Khoosal D, Terry T. Psychological functions in male-to-female people before and after surgery. *Sexual and Relationship Therapy*. 2008 May; 23(2):141-5. (Not in PubMed)
- Urban R, Teng N, Kapp D. Gynecologic malignancies in female-to-male transgender patients: the need of original gender surveillance. *Am J Obstet Gynecol*. 2011 May;204(5):e9-e12. Epub 2011 Feb 26. PMID: 21354550.
- Vacchiano RB, Strauss PS. The construct validity of the Tennessee self concept scale. *J Clin Psychol*. 1968 Jul;24(3):323-6. PMID: 5661752.
- Van Caenegem E, Wierckx K, Taes Y, Dedeker D, Van de Peer F, Toye K, Kaufman J, T'Sjoen G. Bone mass, bone geometry, and body composition in female-to-male transsexual persons after long-term cross-sex hormonal therapy. *J Clin Endocrinol Metab*. 2012 Jul;97(7):2503-11. Epub 2012 May 7. PMID: 22564669.
- A-Van Caenegem E, Taes Y, Wierckx K, Vandewalle S, Toye K, Kaufman J, Schreiner T, Haraldsen I, T'Sjoen G. Low bone mass is prevalent in male-to-female transsexual persons before the start of cross-sex hormonal therapy and gonadectomy. *Bone*. 2013 May;54(1):92-7. Epub 2013 Jan 28. PMID: 23369987.

- B-Van Caenegem E, Verhaeghe E, Taes Y, Wierckx K, Toye K, Goemaere S, Zmierzak H, Hoebeke P, Monstrey S, T'Sjoen G. Long-term evaluation of donor-site morbidity after radial forearm flap phalloplasty for transsexual men. *J Sex Med*. 2013 Jun;10(6):1644-51. Epub 2013 Mar 27. PMID: 23534878.
- Van Caenegem E, Wierckx K, Taes Y, Schreiner T, Vandewalle S, Toye K, Lapauw B, Kaufman J, T'Sjoen G. Body composition, bone turnover, and bone mass in trans men during testosterone treatment: 1-year follow-up data from a prospective case-controlled study (ENIGI). *Eur J Endocrinol*. 2015 Feb;172(2):163-71. PMID: 25550352.
- Van Caenegem E, Wierckx K, Elaut E, Buysse A, Dewaele A, Van Nieuwerburgh F, De Cuypere G, T'Sjoen G. Prevalence of Gender Nonconformity in Flanders, Belgium. *Arch Sex Behav*. 2015 Jul;44 (5):1281-7. Epub 2015 Jan 15. PMID: 25588709.
- VanderLaan DP, Vokey JR, Vasey PL. Is Transgendered Male Androphilia Familial in Non-Western Populations? The Case of a Samoan Village. *Arch Sex Behav*. 2013; 42:361-70. PMID: 23187702.
- Van Kesteren PJ, Gooren LJ, Megens JA. An epidemiological and demographic study of transsexuals in The Netherlands. *Arch Sex Behav*. 1996 Dec;25(6):589-600. PMID: 8931882.
- Van Kesteren PJ, Asscheman H, Megens JA, Gooren LJ. Mortality and morbidity in transsexual subjects treated with cross-sex hormones. *Clin Endocrinol (Oxf)*. 1997 Sep;47(3):337-42. PMID: 9373456.
- Vasey PL, Bartlett NH. What can the Samoan "Fa'afafine" teach us about the Western concept of gender identity disorder in childhood? *Perspect Biol Med*. 2007 Autumn;50(4):481-90. PMID: 17951883.
- Veatch RM. Indifference of subjects: An alternative to equipoise in randomized clinical trials. *Soc Phil Policy*. 2002; 19:295-323. PMID: 12678091.
- Veale J. Prevalence of transsexualism among New Zealand passport holders. *Aust N Z J Psychiatry*. 2008 Oct;42(10):887-9. PMID: 18777233.
- Vrouenraets LJ, Fredriks AM, Hannema SE, Cohen-Kettenis PT, de Vries MC. Early Medical Treatment of Children and Adolescents With Gender Dysphoria: An Empirical Ethical Study. *J Adolesc Health*. 2015 Oct;57(4):367-73. Epub 2015 Jun 25. PMID: 26119518.
- Vujovic S, Popovic S, Sbutega-Milosevic G, Djordjevic M, Gooren L. Transsexualism in Serbia: a twenty-year follow-up study. *J Sex Med*. 2009 Apr;6(4):1018-23. Epub 2008 Mar 4. PMID: 18331254.
- Vujović S, Popović S, Mrvošević Marojević L, Ivović M, Tančić-Gajić M, Stojanović M, Marina LV, Barać M, Barać B, Kovačević M, Duišin D, Barišić J, Djordjević ML, Micić D. Finger length ratios in Serbian transsexuals. *Scientific World Journal*. 2014 May 20;2014:Article 763563. 4 pages. PMID: 24982993.
- Walinder J, Thuwe I. *A social-psychiatric follow-up study of 24 sex-reassigned transsexuals*. Gothenburg: Scandinavian University Books, Akademiforlaget. 1975.
- Walinder J, Lundstrom B, Thuwe I. Prognostic factors in the assessment of male transsexuals for sex reassignment. *Br J Psychiatry*. 1978;132: 16-20. (Not in PubMed)
- Ware JE, Sherbourne CD. The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. *Med Care*. 1992 Jun;30(6):473-83. PMID: 1593914.
- Watson D, Friend R. Measurement of social-evaluative anxiety. *J Consult Clin Psychol*. 1969 Aug;33(4):448-57. PMID: 5810590.
- Winter S, Diamond M, Green J, Karasic D, Reed T, Whittle S, Wylie K. Transgender people: health at the margins of society. *Lancet*. Epub 16 June 2016 [http://dx.doi.org/10.1016/S0140-6736\(16\)00683-8](http://dx.doi.org/10.1016/S0140-6736(16)00683-8)

Weigert R, Frison E, Sessieq Q, Al Mutairi K, Casoli V. Patient satisfaction with breasts and psychosocial, sexual, and physical well-being after breast augmentation in male-to-female transsexuals. *Plast Reconstr Surg*. 2013 Dec;132(6):1421-9. PMID: 24281571.

A-Weyers S, Elaut E, De Sutter P, Gerris J, T'Sjoen G, Heylens G, De Cuypere G, Verstraelen H. Long-term assessment of the physical, mental, and sexual health among transsexual women. *J Sex Med*. 2009 Mar;6(3):752-60. Epub 2008 Nov 17. PMID: 19040622.

B-Weyers S, Decaestecker K, Verstraelen H, Monstrey S, T'Sjoen G, Gerris J, Hoebeke P, Villeirs G. Clinical and transvaginal sonographic evaluation of the prostate in transsexual women. *Urology*. 2009 Jul;74(1):191-6. Epub 2009 Apr 23. PMID: 19395005.

WHO 1996: Harper A. Manual for World Health Organization Quality of Life Abbreviated. Director Dr. J. Orley. [http://www.who.int/mental\\_health/media/en/76.pdf](http://www.who.int/mental_health/media/en/76.pdf).<sup>4</sup>

WHO 2011: Carlos F. Caceres CF, GerbaseA, Ying-Ru Lo Y-R, Rodolph M (key drafters). *Prevention and treatment of HIV and other sexually transmitted infections among men who have sex with other men and transgender people. Recommendations for a public health approach*. World Health Organization. 2011. [http://www.who.int/hiv/pub/guidelines/msm\\_guidelines2011/en/](http://www.who.int/hiv/pub/guidelines/msm_guidelines2011/en/).<sup>4</sup>

WHO 2014: Chris Beyrer C, Kamarulzaman A (co-chairs.) World Health Organization. *Consolidated guidelines on HIV prevention, diagnosis, treatment, and care for key populations*. July 2014. [www.who.int/hiv/pub/guidelines/keypopulations/en/](http://www.who.int/hiv/pub/guidelines/keypopulations/en/).<sup>4</sup>

WHO 2015: Poteat T, Keatley J. (key drafters). *Policy Brief: Transgender People and HIV*. World Health Organization. July 2015. <http://www.who.int/hiv/pub/transgender/transgender-hiv-policy/en/>.<sup>4</sup>

Wiegel M, Meston C, Rosen R. The female sexual function index (FSFI): cross-validation and development of clinical cutoff scores. *J Sex Marital Ther*. 2005 Jan-Feb;31(1):1-20. PMID: 15841702.

A-Wierckx K, Elaut E, Van Caenegem E, Van De Peer F, Dedeker D, Van Houdenhove E, T'Sjoen G. Sexual desire in female-to-male transsexual persons: exploration of the role of testosterone administration. *Eur J Endocrinol*. 2011 Aug;165(2):331-7. Epub 2011 May 20. PMID: 21602316.

B-Wierckx K, Van Caenegem E, Elaut E, Dedeker D, Van de Peer F, Toye K, Weyers S, Hoebeke P, Monstrey S, De Cuypere G, T'Sjoen G. Quality of life and sexual health after sex reassignment surgery in transsexual men. *J Sex Med*. 2011 Dec;8(12):3379-88. Epub 2011 Jun 23. PMID: 21699661.

Wylie K, Knudson G, Khan S, Bonierbale M, Watanyusakul S, Baral S. Serving transgender people: clinical care considerations and service delivery models in transgender health. *Lancet*. Epub 16 June 2016. [http://dx.doi.org/10.1016/S0140-6736\(16\)00682-6](http://dx.doi.org/10.1016/S0140-6736(16)00682-6)

A-Wierckx K, Van Caenegem E, Pennings G, Elaut E, Dedeker D, Van de Peer F, Weyers S, De Sutter P, T'Sjoen G. Reproductive wish in transsexual men. *Hum Reprod*. 2012 Feb;27(2):483-7. Epub 2011 Nov 28. PMID: 22128292.

B-Wierckx K, Mueller S, Weyers S, Van Caenegem E, Roef G, Heylens G, T'Sjoen G. Long-term evaluation of cross-sex hormone treatment in transsexual persons. *J Sex Med*. 2012 Oct;9(10):2641- 51. Epub 2012 Aug 20. PMID: 22906135.

C-Wierckx K, Stuyver I, Weyers S, Hamada A, Agarwal A, De Sutter P, T'Sjoen G. Sperm freezing in transsexual women. *Arch Sex Behav*. 2012 Oct;41(5):1069-71. PMID: 22968492.

Wierckx K, Elaut E, Declercq E, Heylens G, De Cuypere G, Taes Y, Kaufman J, T'Sjoen G. Prevalence of cardiovascular disease and cancer during cross-sex hormone therapy in a large cohort of trans persons: a case-control study. *Eur J Endocrinol*. 2013 Oct;169(4):471-8. Epub 2013 Sep 13. PMID: 23904280.

- A-Wierckx K, Elaut E, Van Hoorde B, Heylens G, De Cuypere G, Monstrey S, Weyers S, Hoebeke P, T'Sjoen G. Sexual desire in trans persons: associations with sex reassignment treatment. *J Sex Med.* 2014 Jan;11(1):107-18. Epub 2013 Oct 24. PMID: 24165564.
- B-Wierckx K, Gooren L, T'Sjoen G. Clinical review: Breast development in trans women receiving cross-sex hormones. *J Sex Med.* 2014 May;11(5):1240-7. Epub 2014 Mar 12. PMID: 24618412.
- Williamson C. Providing care to transgender persons: a clinical approach to primary care, hormones, and HIV management. *J Assoc Nurses AIDS Care.* 2010 May-Jun;21(3):221-9. Epub 2010 Apr 3. PMID: 20363651.
- Wilson CA, Davies DC. The control of sexual differentiation of the reproductive system and brain. *Reproduction.* 2007 Feb;133(2):331-59. PMID: 17307903.
- Wilson EC, Garofalo R, Harris DR, Belzer M. Sexual risk taking among transgender male-to-female youths with different partner types. *Am J Public Health.* 2010 Aug;100(8):1500-5. Epub 2009 Nov 12. PMID: 20622176.
- Wilson E, Pant SB, Comfort M, Ekstrand M. Stigma and HIV risk among Metis in Nepal. *Cult Health Sex.* 2011 Mar;13(3):253-66. PMID: 21058085.
- Wilson P, Sharp C, Carr S. The prevalence of gender dysphoria in Scotland: a primary care study. *Brit J Gen Pract.* 1999; 49 (449): 991-2. PMID: 10824346.
- Wilson RC, Nimkarn S, Dumic M, Obeid J, Azar MR, Najmabadi H, Saffari F, New MI. Ethnic- specific distribution of mutations in 716 patients with congenital adrenal hyperplasia owing to 21- hydroxylase deficiency. *Mol Genet Metab.* 2007 Apr;90(4):414-21. Epub 2007 Feb 1. Erratum in: *Mol Genet Metab.* 2008 Feb;93(2):219. Azar, Maryam [corrected to Azar, Maryam Razzaghy]. PMID: 17275379.
- A-Wise LA, Palmer JR, Hatch EE, Troisi R, Titus-Ernstoff L, Herbst AL, Kaufman R, Noller KL, Hoover RN. Secondary sex ratio among women exposed to diethylstilbestrol in utero. *Environ Health Perspect.* 2007 Sep;115(9):1314-9. PMID: 17805421.
- B-Wise LA, Titus-Ernstoff L, Palmer JR, Hoover RN, Hatch EE, Perez KM, Strohsnitter WC, Kaufman R, Anderson D, Troisi R. Time to pregnancy and secondary sex ratio in men exposed prenatally to diethylstilbestrol. *Am J Epidemiol.* 2007 Oct 1;166(7):765-74. Epub 2007 Jun 27. PMID: 17596265.
- Wise TN, Meyer JK. The border area between transvestism and gender dysphoria: transvestitic applicants for sex reassignment. *Arch Sex Behav.* 1980 Aug;9(4):327-42. PMID: 7416946.
- Wolfradt U, Engelmann S. Depersonalization, fantasies, and coping behavior in clinical context. *J Clin Psychol.* 1999 Feb;55(2):225-32. PMID: 10100823.
- Wolfradt U, Neumann K. Depersonalization, self-esteem and body image in male-to-female transsexuals compared to male and female controls. *Arch Sex Behav.* 2001 Jun;30(3):301-10 PMID: 11330119.
- WPATH 2001 Meyer III W, Bockting WO, Cohen-Kettenis P, Coleman E, DiCeglie D, Devor H, Gooren L, Hage JJ, Kirk S, Kuiper B., Laub D., Lawrence A., Menard Y., Monstrey S, Patton J, Schaefer L., Webb A, Wheeler CC . *The Harry Benjamin International Gender Dysphoria Association's Standards Of Care For Gender Identity Disorders.* (6th version) February, 2001. [http://www.wpath.org/site\\_page.cfm?pk\\_association\\_webpage\\_menu=1351&pk\\_association\\_webpage=4655](http://www.wpath.org/site_page.cfm?pk_association_webpage_menu=1351&pk_association_webpage=4655).<sup>17</sup>
- WPATH 2012 Coleman E, Bockting W, Botzer M, Cohen-Kettenis P, DeCuypere G, Feldman J, Fraser L, Green J, Knudson G, Meyer WJ, Monstrey S, Adler RK, Brown GR, Devor AH, Ehrbar R, Ettner R, Eyler E, Garofalo R, Karasic DH, Istar Lev A, Mayer G, Meyer-Bahlburg H, Paxton Hall B, Pfäfflin F, Rachlin K, Robinson B, Schechter LS, Tangpricha V, van Trotsenburg M, Vitale A, Winter S, Whittle S, Wylie KR, Zucker K. *Standards of care for the health of transsexual, transgender, and gender-nonconforming people.* (7th version) 2012. [http://www.wpath.org/site\\_page.cfm?pk\\_association\\_webpage\\_menu=1351&pk\\_association\\_webpage=3926](http://www.wpath.org/site_page.cfm?pk_association_webpage_menu=1351&pk_association_webpage=3926).<sup>18</sup>

Wroblewski P, Gustafsson J, Selvaggi G. Sex reassignment surgery for transsexuals. *Curr Opin Endocrinol Diabetes Obes.* 2013 Dec;20(6):570-4. PMID: 24468760.

Wyler J, Battegay R, Krupp S, Rist M, Rauchfleisch U. [Transsexualism and its therapy]. *Schweiz Arch Neurol Neurochir Psychiatr.* 1979;124(1):43-58. PMID: 482895.

Yahyaoui R, Esteva I, Haro-Mora J, Almaraz M, Morcillo S, Rojo-Martínez G, Martínez J, Gómez-Zumaquero J, González I, Hernando V, Soriguer F. Effect of long-term administration of cross-sex hormone therapy on serum and urinary uric acid in transsexual persons. *J Clin Endocrinol Metab.* 2008 Jun;93(6):2230-3. Epub 2008 Mar 18. PMID: 18349066.

Yik Koon, T. (2002). *The Mak Nyahs: Malaysian Male to Female Transsexuals.* (Chapter 4) Eastern Universities Press.

Zhu, Y, Imperato-McGinley, J, Male Sexual Differentiation Disorder and 5 $\alpha$ -Reductase-2 Deficiency. *Glob. libr. women's med.*, (ISSN: 1756-2228) 2008; DOI 10.3843/GLOWM.10350. (Not in PubMed.)

Zigmond AS, Snaith RP. The hospital anxiety and depression scale. *Acta Psychiatr Scand.* 1983 Jun;67(6):361-70. PMID: 6880820.

Zimmermann A, Zimmer R, Kovacs L, Einödshofer S, Herschbach P, Henrich G, Tunner W, Biemer E, Papadopoulos N. [Transsexuals' life satisfaction after gender transformation operations]. *Chirurg.* 2006 May;77(5):432-8. German. Erratum in *Chirurg.* 2006 Jun;77(6):530. PMID: 16437228.

Zoni AC, González MA, Sjögren HW. Syphilis in the most at-risk populations in Latin America and the Caribbean: a systematic review. *Int J Infect Dis.* 2013 Feb;17(2):e84-92. Epub 2012 Oct 12. PMID: 23063547.

Zucker KJ, Bradley SJ, Hughes HE. Gender dysphoria in a child with true hermaphroditism. *Can J Psychiatry.* 1987 Oct;32(7):602-9. PMID: 3676994.

A-Zucker KJ, Bradley SJ, Kuksis M, Pecore K, Birkenfeld-Adams A, Doering RW, Mitchell JN, Wild J. Gender constancy judgments in children with gender identity disorder: evidence for a developmental lag. *Arch Sex Behav.* 1999 Dec;28(6):475-502. PMID: 10650437.

B-Zucker KJ. Intersexuality and gender identity differentiation. *Annu Rev Sex Res.* 1999;10:1-69. PMID: 10895247.

Zucker K, Cohen-Kettenis P, Drescher J, Meyer-Bahlburg H, Pfäfflin F, Womack W. Memo outlining evidence for change for gender identity disorder in the DSM-5. *Arch Sex Behav.* 2013 Jul;42(5):901-14. PMID: 23868018.



## CANADIAN GENDER REPORT

[Home](#) [About Us](#) [Resources](#) [Articles and Briefings](#) [Contact Us](#)[Home](#) - [Gender Identity](#) - [Bias, not evidence dominates WPATH transgender standard of care](#)

# Bias, not evidence dominates WPATH transgender standard of care

FEATURED , [GENDER IDENTITY](#) , [HEALTHCARE](#)

Canadian Gender Report

October 1, 2019 22 Comments

*The following investigative report was contributed by @LisaMacRichards (a pseudonym). @LisaMacRichards works at a Canadian hospital and holds a Master of Science degree from the University of British Columbia. We're very thankful for the diligent work she invested to research and write this article and we appreciate the opportunity to publish it here.*

## SUPPORT OUR WORK

To support Canadian Gender Report, please donate.

[Donate](#)

## RECENT REPORTS



New Canadian Study on Detransition – A Review



Sweden, France revert to cautious approach for gender diverse youth



SEGM – Gender affirmation model of care lacks evidence base



How Ontario School Boards are Responding to Parent Concerns



Letter to WRDSB Trustees: Open Discussion of Gender and Sexuality Materials

by @LisaMacRichards

Made Available at  
Your Schools Is  
Urgently Needed

Many people are surprised to find out that children with gender dysphoria are being prescribed puberty blockers as early as age [ten](#), cross-sex hormones as early as [age 12](#) or 13, and double mastectomies for girls as early as age 13 in countries throughout the world, including Canada. Some professionals and transgender advocates say that gender-dysphoric teens should be able to have genital surgeries and hysterectomies before [age 18](#) on the basis of informed consent, with no mental health assessment required.

In Canada, transition-related care, including sex reassignment surgery is typically provided by specialized gender clinics. Provincial health insurers such as OHIP in Ontario and the PHSA in British Columbia require that providers align with the World Professional Association of Transgender Health Standards of Care (WPATH SOC). WPATH published its seventh version of the SOC in 2011, and is currently working on its eight version.

The amended OHIP criteria... align with the internationally-accepted standards of care for gender dysphoria, which are established by the World Professional Association of Transgender Health (WPATH).

[Ontario Ministry of Health](#)

The Canadian Mental Health Association references WPATH in its [public website statement](#) that medical transition for gender-diverse youth is the best way to treat the distress that arises when an individual's body does not match their gender identity.



Canadian Mental  
Health Association

Ontario

ABOUT US GET INVOLVED EVENTS CONTACT

FRANÇAIS

MENTAL HEALTH

ADDICTIONS

POLICY

PROVINCIAL PROGRAMS

## Support for medical transition for gender-diverse youth in Ontario

The World Professional Association of Transgender Health states that access to gender-supportive health services, including hormone blockers, hormones and trans surgery is the best way to treat the distress that arises when an individual's body does not match their gender identity.

Whenever anyone questions the early social transition of children and adolescents with gender dysphoria or the use of medical interventions to align one's body with their gender identity, the usual response from

### Subscribe

email address

SUBSCRIBE

### CATEGORIES

- Detransition
- Education
- Ethics
- Featured
- Gender
- Gender Identity
- Healthcare
- Parent Report
- Policy
- Research

### BROWSE TAGS

AFFIRMING CARE

ASD

AUTISM

BILL C-6

BILL C6

CANADA

COMPELLED SPEECH



transgender advocates is that there is an international consensus of transgender treatment among professionals. In fact, the National Post recently published [an article](#) with a quote from a transgender activist saying “transition-related care is safe, effective, and supported by the entire mainstream of the medical community.”

## Medical Guidelines

Guidelines are becoming increasingly important for busy medical practitioners who cannot stay abreast of all developments in every medical field. To address this, professional medical bodies and societies started to publish various guidelines in the 1990s, in order to clearly formulate best medical practices, to assure patients they are receiving appropriate care, and to standardize care so that most patients will receive the same care across many settings. However, many people started questioning whether medical guidelines are being developed using quality medical evidence and whether [conflicts of interest](#) could be influencing the recommendations.

Challenges in guideline development include limitations in the scientific evidence on which clinical practice guidelines (CPGs) are based, lack of transparency of development groups’ methodologies, questions about how to reconcile conflicting guidelines, and conflict of interests among guideline development group members and funders.

To address these problems, the Institute of Medicine (now called the National Academy of Medicine) wrote “[Clinical Practice Guidelines We Can Trust](#)”, published in 2011, which outlined trustworthy guideline development that minimizes bias and conflict of interest. Clinical guidelines in the US were kept in a central database at the National Guideline Clearinghouse (NGC), which was funded by the US Department of Health and Human Services. Having a government-funded, non-profit third party to analyze guidelines is crucial in order to assess the quality of clinical practice guidelines. However, in 2018, the Trump administration cut this funding, and the NGC has unfortunately been shut down. A non-profit patient safety organization, [ECRI Guidelines Trust](#) has stepped in.

Canada does not have its own third-party guideline clearinghouse. The Canadian Medical Association keeps a database of Canadian clinical guidelines, through a subsidiary called “[Joule](#)”. Guidelines International Network (GIN) also maintains a [guideline library](#).

CONVERSION  
THERAPY

CRITICAL RACE  
THEORY

CRITICAL THEORY

CURRICULUM

DETRANSITION

DETRANSITIONERS

GENDER

GENDER  
AFFIRMATION

GENDER  
AFFIRMING  
CARE

GENDER DIVERSITY

GENDER  
DYSPHORIA

GENDER IDEOLOGY

GENDER SPECTRUM

GENDER THEORY



## WPATH Guidelines Do Not Qualify for ECRI Trust Scorecard

ECRI provides a “Trust Scorecard” that rates the quality of the guidelines, based on evidence strength and the measures taken to reduce bias in the recommendations. After searching the ECRI database for transgender care guidelines, the only guideline posted was the “Endocrine Society Clinical Practice Guidelines of Gender-Dysphoric/Gender-Incongruent Persons, 2017”. It was not given a Trust Scorecard rating. The WPATH SOC was not included in the database.

When ECRI was contacted by this author and asked why WPATH guidelines were not included, and why the Endocrine Society guidelines did not have a scorecard rating, they responded in an email, saying that the reason the Endocrine Society guidelines did not meet inclusion criteria to be rated was because “Only a few of their recommendations were supported by the systematic review; the majority were not.” The reason WPATH was not included, ECRI stated, was because the guidelines were over five years old, and “did not use a systematic review to process”.

They did not use a systematic review to process.

ECRI

A search of the Canadian database yielded no results for transgender treatment. When contacted, Joule’s response was “In order to be included in our database, all guidelines have to be either developed or endorsed by an authoritative medical/healthcare organization. Neither the WPATH nor the Endocrine Society guidelines on transgender care have been endorsed by any Canadian organization(s) and therefore are not included in our database”. A search of the GIN library also yielded no results for transgender care.

Neither the WPATH nor the Endocrine Society guidelines on transgender care have been endorsed by any Canadian organization(s) and therefore are not included in our database.

Joule

HEALTH

INFORMED CONSENT

LEGISLATION

MEDIA

MEDICAL ETHICS

MEDICAL GUIDELINES

MEDICINE

MENTAL HEALTH

NURSING

ONTARIO

PEDAGOGY

PUBERTY BLOCKERS

PUBLIC EDUCATION

SOCIAL MEDIA

SOGI

SPORT

STANDARD OF CARE

STATS CANADA

SWEDEN

THERAPY

TRANSGENDER

TRANSGENDER HEALTH

WOMEN

WOMENS RIGHTS

Guidelines over five years old are at high risk of becoming clinically irrelevant due to new research findings, or changes in patient populations. Given the rapidly changing epidemiology and treatments in transgender care, seven-year-old guidelines are severely outdated in this field. One case in point is that when the WPATH guidelines were published in 2011, natal males were the primary group presenting to gender clinics in adolescence, but now males have been eclipsed by natal females [3 to 1](#).

SEARCH

Research on male adolescent clients cannot be generalized to females, an age-old fallacy in medicine. This makes the entire recommendation section for adolescent transgender care in the WPATH SOC dubious at best, irrelevant at worst. Investigation must be undertaken to determine why a new cohort has developed, and whether this group can be included in guidelines that were developed for a group with different histories and possibly different etiologies.

## **Conflict of Interest in Guideline Development and Committee Members**

A systematic review of clinical guideline development in 2011 revealed [56 to 87%](#) of the authors had a conflict of interest (COI) in all clinical practice guidelines. In “Guidelines We Can Trust”, the Institute of Medicine (IOM) states that a key factor in eliminating bias and conflict of interest (COI) is taking care in the composition of guideline committee members. Obvious financial COIs such as affiliations with pharmaceutical companies are a given.

There are other significant sources of conflict of interests, however, that also must be considered. According to IOM, examples of non-commercial financial activities include research grants and support from foundations or other nonprofit organizations for the person’s work or their institution. A person whose work or professional group is fundamentally jeopardized or enhanced by a guideline recommendation is said to have intellectual COI. Other intellectual COIs include authoring a publication or acting as an investigator on a peer-reviewed grant directly related to the recommendations under consideration.

The chair of a guideline development committee and most of the members should not have any conflict of interest, including income from clinical work. Often, however, in any given field, it is hard to find any experts who are not



receiving income in their practices. The IOM guidelines allow for some members to have COIs, as long as they do not have voting privileges or make up over half the group. Ideally, the majority of guideline developers should be unconflicted methodologists, such as epidemiologists, statisticians, healthcare researchers, and/or “guidelineologists”, who lead the formulation of recommendations in collaboration with clinical experts.

## **Conflict of Interest in WPATH SOC Committee Members**

When looking at the WPATH committee who worked on the current SOC document, a cursory examination of the members reveals that every one of the members have significant COIs. All of them either receive income based on recommendations in the guidelines, work at clinics or universities who receive funds from advocacy groups, foundations, or pharmaceutical companies who heavily favour a certain treatment paradigm, or have received grants and published papers or research in transgender care. The majority of the members are from the US, and six of them have affiliations with the same university—the University of Minnesota Program in Sexuality, which is primarily funded by a transgender advocacy organization (Tawani Foundation).

Eli Coleman, the committee chair for the WPATH SOC, who IOM guidelines stipulate should be completely free of conflict of interest, has his very position at the University of Minnesota funded by Jennifer Pritzer, a trans person and head of Tawani. In fact, there are press releases of Eli Coleman in 2017 thanking Jennifer Pritzer profusely for a generous donation, which adds up to 6.5 million dollars that Tawani has given to the university. Tawani also funded WPATH SOC development. Another advocacy group, Gender Identity Research and Education Society (GIRES) funded the translation of the SOC into various languages.

There was also an “anonymous donor” who supported guideline development. Did the anonymous funder want a certain outcome from the recommendations? Who knows?

Funding sources must be named, according to the IOM guidelines.

Three of the same committee members for the WPATH Guidelines, also served on the Endocrine Society guideline committee, which means intellectual COI is at play. Any recommendations based on faulty conclusions in the WPATH guidelines would potentially have been duplicated in the Endocrine Society guidelines.

Although pharmaceutical companies were not directly involved in WPATH SOC, they often donate to advocacy organizations, which could directly influence recommendations. Pharmaceutical companies often make large donations to universities as well.

At least four committee members are or were editors of transgender research journals. In the US, 50% of editors of research journals take industry payments, and yet they do not need to declare conflicts of interest. Editors have control over which articles are published, which can shape systematic reviews in the future. It is well established now that journal reviewers and editors are less enthusiastic to publish a study with unremarkable or negative results. The WPATH SOC chair, Eli Coleman, is also an editor of a transgender journal and started another journal in the past.

WPATH has a history of being funded and pressured by transgender activists and transgender organizations. For example, during the 2018 WPATH conference when the version 8 SOC development was being discussed, Dr. Marci Bowers, a prominent transgender surgeon who performs genital surgery, stood up in the meeting and urged the SOC committee members to be “bold” in their recommendations. Many transgender people in the audience stood up and clapped.

This surgeon is now on the WPATH Board of Directors.

At the 2017 USPATH/WPATH conference, activists protested and shut down a session with Dr. Kenneth Zucker, who endorsed a cautious approach to treating children with gender dysphoria. Rather than engaging with different viewpoints, WPATH agreed to cancel Dr. Zucker (who ironically was on the WPATH SOC committee) and apologize on their website for inviting him. WPATH is allowed to discuss only topics and engage with presenters that are approved by activists, which is the antithesis to a professional organization, or evidence-based inquiry.

WPATH is not the typical professional organization that develops clinical practice guidelines. WPATH is a hybrid professional and activist organization, where activists have become voting members and have served as president. In fact, it can be argued that WPATH is activist-led rather than evidence-led, as witnessed at their conferences. Their guidelines are just following what is being performed in gender clinics based on informed consent.



## **Lack of Systematic Review and Evidence for WPATH SOC**

WPATH did not perform a systematic review to draw conclusions for their recommendations in the SOC. Perhaps WPATH already knew that there would be no evidence for their recommendations, as they state this numerous times throughout the guidelines. There are assertions such as:

To date, no controlled clinical trials of any feminizing/masculinizing hormone regimen have been conducted to evaluate safety or efficacy in producing physical transition.

WPATH SOC Version 7

They then proceed to recommend hormones with no rationale given.

The document is full of contradicting statements. For example, WPATH says:

“Gender dysphoria during childhood does not inevitably continue into adulthood. Rather, in follow-up studies of prepubertal children (mainly boys) who were referred to clinics for assessment of gender dysphoria, the dysphoria persisted into adulthood for only 6 to 23% of children.”

And then they later state: “Early use of puberty-suppressing hormones may avert negative social and emotional consequences of gender dysphoria more effectively than their later use would.”

So even though only 6 to 23% of gender dysphoric children will persist into adulthood, WPATH, with no rationale given, endorses suppressing puberty as soon as it starts.

**In fact, no rationale is given as to why a medical model of affirmation is recommended in the first place.**

They briefly state that conversion therapy is not successful. Conversion therapy is not defined but seems to be anything other than the medical model to treat gender dysphoria. The references they provide are three chapter books or case studies from the 1960's that are no longer in print, and an article written in Dutch from 1984. Two of the titles refer to “aversion therapy”, which most people would agree is not ethical. However, counseling, cognitive behaviour therapy, or psychotherapy is not considered.

A literature search performed by ECRI shows that no systematic research or review has been conducted to see if any non-medical therapy could be successful, in order to avoid a lifetime of medication and surgeries. The assumption that thoughts and feelings are unchangeable, while the body should be changed, is the paradigm that is assumed in this document with no rationale given. A lifetime of off-label medications and multiple surgeries are assumed to be preferable to the option of considering treatment to help people be at peace in their natural bodies.

In light of the COIs described above, we can see that there are many benefits to a medicalized model for the committee members, both financially and for their careers. If evidence showed that a non-medical treatment for gender dysphoria was more effective, would committee members be inclined to recommend this treatment, at great cost to their income and careers?

## Low-Quality Medical Guidelines Legitimize Potential Harm

When guideline recommendations are made without evidence, they are regarded as clinical consensus statements. In light of the lack of knowledge of safety or efficacy of treatment, one might wonder how there is clinical consensus on transgender treatment—that risky and irreversible treatments are the only treatment option to be researched, rather than considering whether thinking can be changed.

In fact, the WPATH SOC does allude to the possibility that therapy can be beneficial:

Often with the help of psychotherapy, some individuals integrate their trans- or cross-gender feelings into the gender role they were assigned at birth and do not feel the need to feminize or masculinize their body.

However, elsewhere they state that psychotherapy should focus on the patient's distress, and not conversion therapy. There is no further discussion about researching how psychotherapy could help people avoid treatment altogether, despite the statement that psychotherapy helps some people integrate into their "gender role assigned at birth".



The following quote in the Institute of Medicine document about poorly developed clinical guidelines holds true for the WPATH SOC regarding faulty guideline development:

Poorly articulated or indirect evidence chains can make it difficult to discern which parts of the analytic logic are based on science or opinion, the quality of that evidence, and how it was interpreted. Readers can be misled into thinking that there is more (or less) scientific support for recommendations than actually exists. The ambiguity can also cause difficulty in establishing research priorities.

Institute of Medicine

Many gender dysphoric youth and their parents wonder if therapy would be an alternative to permanent alterations to their bodies. They are told that therapy has been shown to be ineffective and that transition is the only cure for gender dysphoria. They are not being told the truth—that non-medical methods to deal with gender dysphoria have never been seriously researched.

Carl Heneghan, editor-in-chief of the British Medical Journal, and Professor of Evidence-Based Medicine from the University of Oxford performed a review of the literature for puberty blockers and cross-sex hormones in children and adolescence. He concluded: "The current evidence base does not support informed decision making and safe practice in children."

The current evidence base does not support informed decision making and safe practice in children.

Carl Heneghan, editor-in-chief of the British Medical Journal, and Professor of Evidence-Based Medicine at the University of Oxford

The public (including media and other medical professional bodies) blindly trusts that the recommendations for transgender care have come out of robust scientific research and objective guideline development. However, even WPATH SOC committee members and transgender clinicians have repeatedly admitted that there is no long-term research to show that benefits



outweigh harms in transgender treatment, whether it is social transitioning, puberty blockers, hormones or surgery.

In an article written by transgender clinicians and researchers five years AFTER the WPATH SOC was published (several of whom were on the WPATH SOC Committee) they state the lack of quality data in transgender research:

Expansion of the evidence-base to inform transgender clinical care requires rich systematically collected data that at present are scarce or lacking in the U.S. The available data pertaining to transgender health are often based on convenience samples and the majority of published studies in the U.S. are cross-sectional or retrospective. The few published prospective follow up studies are small and have examined a limited number of outcomes.

Three of the same gender professionals again said a year earlier in the AMA Journal of Ethics: “Transgender medicine presents a particular challenge for the development of evidence-based guidelines. First and foremost, data on health outcomes in transgender medicine are currently limited to retrospective studies, case series, and individual case reports.”

The same authors go on to say that, even though there is no evidence, “The existence of guidelines in the field of transgender medicine both legitimizes the need for gender-affirming medical and surgical interventions and informs medical practitioners and policymakers on how to best meet these needs.” This statement could not show more clearly the harm low-quality medical guidelines can do—legitimize potential harm and lead other medical professionals to assume the guidelines were developed based on quality data and scientific rigor.

## Conclusion

When someone says “transition-related care is safe, effective, and supported by the entire mainstream of the medical community”, they are basing their faith unquestioningly on guidelines that were developed by people and organizations with conflicts of interest, with no systematic review, and with no evidence of safety or efficacy of treatment. These “guidelines” do not meet inclusion criteria for any clinical guideline database and have not

received an endorsement from any professional body in Canada. And yet, WPATH guidelines are given as the rationale to support the unthinkable: to physically harm a distressed and vulnerable population.

To their credit, WPATH does not say anywhere in the SOC that treatment is proven safe and effective. Instead, the overall message in the guidelines is to urge physicians to follow the patient's wishes only, putting aside scientific evidence and ethical delivery of care.

The concept of an innate gender identity is unproven, unverifiable, and does not even have a clear definition. In the same spirit of historical psychiatric misadventures, somatic treatments are being prescribed for a psychologically based identity disorder. How many vulnerable children, adolescents and young adults will be harmed before we realize that history is repeating itself.

CATEGORY: [FEATURED](#) [GENDER IDENTITY](#) [HEALTHCARE](#)

TAGGED: [MEDICAL GUIDELINES](#) [STANDARD OF CARE](#) [TRANSGENDER](#)

[← PREVIOUS ARTICLE](#)

**Registered Nurse and mother of ROGD daughter questions medical pathway for gender dysphoria.**

[NEXT ARTICLE →](#)

**New study casts doubt on social gender transitioning for children**

## 22 thoughts on "Bias, not evidence dominates WPATH transgender standard of care"

Hacsi Horvath

October 2, 2019 at 2:09 pm

A brilliant, much-needed analysis. This is crucial information that needs to be shared widely. Thank you.

REPLY

---

**Ralph Roberts**

October 2, 2019 at 8:23 pm

I hope this has an impact. What could be done. IT feels like we are almost too late as their are so many deeply invested how do you step back in this situation?

REPLY

---

**Pamela Buffone**

October 2, 2019 at 10:42 pm

Great question. It's never too late. If anyone has ideas, we're all ears! Make sure you subscribe to stay informed. We'll be sharing more research and coming up with practical steps you can help us with.

REPLY

---

**Jamie Barkwell**

October 2, 2019 at 8:39 pm

Great article. I appreciate the research you guys are doing.

On a technical note: I had a super hard time reading it due to 8 lines being unreadable due to twitter/Facebook/Pinterest and other tabs blocking 3-4 letters on each line. I was forced to read the whole article in only 3-4 lines at the bottom of my screen that were unblocked. I had the same issues on the other genderreport.ca articles. Could these buttons be removed? It would make reading the articles much easier. Thanks

REPLY

---

**Pamela Buffone**

October 2, 2019 at 10:32 pm



Thanks for the feedback! We'll address that issue.

REPLY

---

Pingback: Legislation to Ban Conversion Therapy for Sexual Orientation and Gender Identity - CANADIAN GENDER REPORT

---

**Nan**

January 26, 2020 at 1:08 pm

I would like to know if there are any legal consequences for the doctors or or medical practitioners if they they prescribe off label drugs 2 patients

Surely there is a duty of care when prescribing drugs with unknown side effects and damaging side effects,

REPLY

---

**Pamela Buffone**

January 26, 2020 at 2:16 pm

Doctors are using "informed consent" to waive their responsibility. The first legal challenge is happening in the UK by a detransitioner and former nurse at the gender identity clinic there. They're arguing that people under the age of 18 are not capable of informed consent on this topic. In Canada, the BC Infants Act was used to uphold the right of a 14 year old to start cross-sex hormones against her father's wishes. The court also ruled that the medical practitioners were acting competently because they were following WPATH. WPATH claims to be the "medical consensus" but my prediction is this will no longer be the case once there is a group of medical experts representing evidence-based approaches to care and taking a more careful look at the research. This is what is needed for lawsuits to be successful. Please subscribe to our mailing list to find out about upcoming developments in this area.

REPLY

---

faith kuzma

March 26, 2020 at 12:11 am

An exceedingly helpful analysis of WPATH! This should be distributed far and wide, within parent groups and to politicians.

REPLY

---

Pingback: Can We Talk About JK Rowling? – OffGuardian

---

Pingback: Who are the rich, white men funding the trans movement? | Femminismo Italiano

---

Pingback: What Medical Transition Looks Like – A2M1N

---

Abi

October 13, 2020 at 10:04 am

Great analysis, thank you. See this tweet for an update on WPATH SOC 7: "while promoting the upcoming version SOC8 due out soon, WPATH inadvertently admits the current SOC7 is not evidence-based (and apparently not standards of care at all)"; WPATH stated: "This version of the Standards of Care [8] is the first to be developed using an evidence-based approach."

<https://twitter.com/ZaneEmma/status/1315877083633995776>

REPLY

---

Pingback: Submission to the Standing Committee on Justice and Human Rights respecting Bill C-6 - CANADIAN GENDER REPORT

---

**Aaron**

January 14, 2021 at 11:15 pm

Thank-you for the enlightening article. Well laid out and considered. I'm sorry things have gotten to this point.

REPLY

---

**Etana Finkler**

June 2, 2021 at 2:37 am

Excellent article; lots of examples and detail. Clearly written. Gives some hope that alternative voices are being published instead of censored.

REPLY

---

**Etana Finkler**

June 2, 2021 at 2:40 am

Oh! But this was written in 2019. Things are much worse now?

REPLY

---

**Cene**

June 25, 2021 at 12:39 pm

Thank you "Pamela".

I don't think that it would ever be possible for an evidence driven team of scientists to create the guidelines to be followed. Researchers will be labeled as transphobic and will lose their reputation and status in short and long term by setting under scrutiny the current status quo. The only possibility that they will be respected is if their findings prove (almost) entirely the claims of WPATH which is very unlikely.

REPLY

---

### Canadian Gender Report

June 25, 2021 at 4:50 pm

You raise a very interesting point. So if no "acceptable" evidence-based guidelines are possible the question comes down to an issue of consent. Just as the UK has ruled on the Keira Bell case, we'll have to wait for a similar test here.

REPLY

---

Pingback: Manufacturing Authority: The case of Aaron Holly Devor (part 2) | a sledge and crowbar

---

Pingback: Usa: mediche trans contro la transizione dei bambini - FEMINIST POST

---

Pingback: No One Wants a Gender Agenda Pushed On Kids - CANADIAN GENDER REPORT

---

## Leave a Reply

Your email address will not be published. Required fields are marked \*

COMMENT

---

NAME \*

EMAIL \*

WEBSITE

☐

SAVE MY NAME, EMAIL, AND WEBSITE IN THIS BROWSER FOR THE NEXT TIME I COMMENT.

POST COMMENT

## Related Posts

Gender Identity ,  
Policy  
2021  
December 6,

Education , Featured ,  
Gender , Gender Identity ,  
Policy  
2022  
January 19,

Gender , Gender Identity ,  
Healthcare ,  
Policy  
2021  
January 7,

Gender Identity , Healthcare ,  
Policy  
2021  
January 14,



Open letter to the  
Senate of Canada

Letter to WRDSB  
Trustees: Open  
Discussion of Gender  
and Sexuality  
Materials Made  
Available at Your  
Schools Is Urgently  
Needed

"Women" not allowed:  
Endometriosis  
Network Complicit in  
Female Erasure

Liberal MP confirms  
Bill C6 will impose  
one-way path to  
medical transition

#### MENU

- Home
- About Us
- Resources
- Articles and Briefings
- Contact Us

#### CATEGORIES

- Detransition
- Education
- Ethics
- Featured
- Gender
- Gender Identity
- Healthcare
- Parent Report
- Policy
- Research

#### PRIVACY POLICY

Canadian Gender  
Report takes your  
privacy seriously. Your  
email address is stored  
securely and we do not  
share your email with  
anyone else. You may  
unsubscribe at anytime.

#### Subscribe

SUBSCRIBE

