

In the Matter of:
CHRISTOPHER FAIN
VS
WILLIAM CROUCH, et al.

DR. DAN KARASIC

April 15, 2022



5010 Dempsey Drive
Cross Lanes WV 25313
304-415-1122

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

CHRISTOPHER FAIN; ZACHARY
MARTELL; BRIAN McNEMAR, SHAWN
ANDERSON a/k/a SHAUNTAE ANDERSON;
and LEANNE JAMES, individually and on
behalf of all others similarly situated,

Plaintiffs,

vs. Civil Action No. 3:20-cv-00740

WILLIAM CROUCH, in his official capacity as
Cabinet Secretary of the West Virginia
Department of Health and Human Resources;
CYNTHIA BEANE, in her official capacity as
Commissioner for the West Virginia Bureau for
Medical Services; WEST VIRGINIA
DEPARTMENT OF HEALTH AND HUMAN
RESOURCES, BUREAU FOR MEDICAL
SERVICES; JASON HAUGHT, in his official
capacity as Director of the West Virginia
Public Employees Insurance Agency; and
THE HEALTH PLAN OF WEST VIRGINIA, INC.,

Defendants.

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VIDEOTAPED DEPOSITION OF DR. DAN KARASIC
BY VIDEO CONFERENCE

The videotaped deposition of Dr. Dan
Karasic was taken on April 15, 2022,
at 12:02 p.m., at 5010 Dempsey Drive,
Cross Lanes, West Virginia.

ELITE COURT REPORTING, LLC
5010 Dempsey Drive
Cross Lanes, West Virginia 25313
(304) 415-1122

Martha Fourney, CSR

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1 A P P E A R A N C E S

2

3 Caleb B David

4 Attorney at Law

5 Shuman McCuskey Slicer, PLLC

6 1141 Virginia Street, East, Suite 200

7 Charleston, West Virginia 25301

8 (By video conference)

9

10 Walt Auvil

11 Attorney at Law

12 The Employment Law Center, PLLC

13 1208 Market Street

14 Parkersburg, West Virginia 26101

15 (By video conference)

16

17 Avatara Smith-Carrington

18 Attorney at Law

19 Lambda Legal Defense and Education Fund

20 3500 Oak Lawn Avenue, Suite 500

21 Dallas, Texas 75219-6722

22 (By video conference)

23

24 Tara L. Borelli

 Attorney at Law

 Lambda Legal Defense and Educational Fund

 1 West Court Square, Suite 105

 Decatur, Georgia 30030

 (By video conference)

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1 I N D E X

2

3 Witness

4 Dr. Dan Karasic

5 Examination

6 by Mr. David Page 05

7

8 Exhibits

9 Number 1 Page 17

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11 Number 3 Page 27

12 Number 4 Page 54

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20 Reporter's Certification Page 182

21 Errata Sheet/Signature Page Enclosed

22

23

24

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1 VIDEOGRAPHER: This is the video

2 deposition of Dr. Dan H. Karasic, being

3 taken by the defendant, Civil Action

4 3:20-cv-00740. Caption, Fain, et al., v.

5 Crouch being West Virginia Department of

6 Health and Human Resources Bureau for

7 Medical Services, et al., U.S. District

8 Court for the Southern District of

9 West Virginia, Huntington Division.

10 We're beginning at 12:02, Friday, the

11 15th day of April 2022, via video

12 teleconference.

13 The court reporter is Martha Fourney.

14 I am the videographer, Jim Damron.

15 Will counsel please state your

16 appearances, and our court reporter will

17 please swear in the witness.

18 MR. DAVID: This is Caleb David on

19 behalf of the defendants.

20 ATTORNEY SMITH: My name is Avatara

21 Smith-Carrington. I use "they" and "them"

22 pronouns. I'm on behalf of plaintiffs.

23 And I have -- go ahead.

24 ATTORNEY BORELLI: This is Tara

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1 Borelli. Also on behalf of plaintiffs.

2 MR. AUVIL: Walt Auvil for the

3 plaintiffs.

4 DR. DAN KARASIC,

5 called as a witness, first being duly

6 sworn by the Court Reporter/Notary Public,

7 testified as follows, to wit:

8 EXAMINATION

9 BY MR. DAVID:

10 **Q. Doctor, can you please state your name**

11 **for the record?**

12 A. Sure. My name is Dan H. Karasic.

13 **Q. And, Doctor, my name is Caleb David.**

14 **You just heard that. But I represent the**

15 **defendants in this lawsuit that's been filed by**

16 **Christopher Fain and Shauntae Anderson. We're**

17 **going to take your deposition today.**

18 I know from your report that you've at

19 least had your deposition taken one other time;

20 is that right?

21 A. Yes.

22 **Q. Have you had your deposition taken any**

23 **times other than that one time noted in your**

24 **report?**

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1 A. I had a deposition taken in Cabading
 2 versus Cal Baptist. It was in -- it's in my CV
 3 of what year it was. It was several years ago.
 4 ATTORNEY SMITH: Caleb --
 5 MR. DAVID: Go ahead.
 6 ATTORNEY SMITH: -- sorry. Just --
 7 not to interrupt. Before we get any
 8 further, just can we agree that an
 9 objection to form will preserve all form
 10 objections without needing to specify?
 11 MR. DAVID: Absolutely. I agree.
 12 ATTORNEY SMITH: Okay.
 13 **Q. Dr. --**
 14 A. I also -- actually -- to finish that
 15 answer -- there have been a few times in the
 16 distant past where I was deposed on issues
 17 relating to patients that I had had in one
 18 clinic or another at San Francisco General
 19 Hospital.
 20 **Q. So you have been through the process**
 21 **and you've heard people tell you about giving**
 22 **verbal answers and trying to ensure that we**
 23 **don't talk over each other, all that kind of**
 24 **stuff, right?**

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1 A. Yes.
 2 **Q. Okay. All right. Can we move forward**
 3 **without going through the whole spiel?**
 4 A. Yes.
 5 **Q. Okay. All right. Doctor, I want to**
 6 **first -- how are you employed currently?**
 7 A. So I am -- I am self-employed in my
 8 private practice. I am also recall faculty, a
 9 small percentage of time, from UCSF after my
 10 retirement from UCSF.
 11 **Q. When did you retire from UCSF?**
 12 A. I retired at the end of June 2020.
 13 **Q. And what do you do in your private**
 14 **practice?**
 15 A. In my private practice, I see patients
 16 via telehealth as a psychiatrist.
 17 **Q. And generally what conditions are you**
 18 **seeing your patients for?**
 19 A. So most of my patients have -- I would
 20 say most of my patients have mood and anxiety
 21 disorders that I'm treating them for as the
 22 psychiatrist.
 23 **Q. What percentage of your patient**
 24 **population is experiencing gender dysphoria or**

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1 **gender-related conditions?**
 2 ATTORNEY SMITH: Object to form.
 3 A. So I just was -- I thought about that
 4 and looked at patients that I saw over a couple
 5 of days, and about two-thirds of my private
 6 practice patients are transgender.
 7 **Q. Do all of those patients who are**
 8 **transgender treat with you for gender dysphoria**
 9 **or gender incongruence?**
 10 ATTORNEY SMITH: Object to form.
 11 A. No. Many of them are transgender but
 12 are seeing me for -- for example, mood and
 13 anxiety disorders or other psychiatric
 14 conditions.
 15 **Q. And I think that from reading your**
 16 **report there is a difference between someone**
 17 **having a transgender identity and someone**
 18 **having gender dysphoria; is that correct?**
 19 ATTORNEY SMITH: Object to form.
 20 A. Yes.
 21 **Q. Can you explain what that difference**
 22 **is?**
 23 A. Sure. So being transgender is an
 24 identity. It's how someone identifies. And

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1 gender dysphoria is used both to describe a
 2 symptom, but also to describe a DSM-5 disorder
 3 of gender dysphoria.
 4 **Q. Is there a difference between gender**
 5 **dysphoria as a symptom and gender dysphoria as**
 6 **a diagnosis?**
 7 ATTORNEY SMITH: Object to form.
 8 A. Yes. The DSM diagnosis requires that
 9 the person be -- the distress that somebody is
 10 experiencing from gender dysphoria be
 11 clinically significant or affecting social or
 12 occupational -- causing social or occupational
 13 impairment.
 14 **Q. Does clinical significance mean that**
 15 **it's causing those social or occupational**
 16 **impairments?**
 17 A. So it can be social or occupational
 18 impairment, or it can be so much distress that
 19 you go to the doctor. So that's what's
 20 clinically significant.
 21 **Q. So there are patients who experience**
 22 **gender dysphoria as a symptom, but do not have**
 23 **the clinical significance that rises to the**
 24 **level of a DSM-5 diagnosis; is that correct?**

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1 ATTORNEY SMITH: Object to form.
 2 A. Yes. In that -- we assume so, in that
 3 there's a fairly decent percentage of people,
 4 maybe one in 200 in large health surveys, who
 5 identify as transgender. So maybe one in 200.
 6 Perhaps one in a thousand, according to
 7 a paper I reference Zhang, are in clinical care
 8 for gender dysphoria. So we assume that there
 9 are people who experience gender dysphoria but
 10 don't go to the doctor for it.
 11 **Q. Okay. So there are - based on the**
 12 **numbers that you just quoted to me - one in 200**
 13 **identify as transgender, one in a thousand are**
 14 **treating for gender dysphoria. So that's -- if**
 15 **I'm doing quick math correctly -- approximately**
 16 **one-fifth of transgender individuals are**
 17 **seeking treatment for gender dysphoria?**
 18 ATTORNEY SMITH: Object to form.
 19 A. It's never been exactly teased out that
 20 way.
 21 **Q. Okay.**
 22 A. But we assume that that's so because
 23 there are fewer people who are actually going
 24 to the doctor. And to get a diagnosis of

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1 gender dysphoria, you would need to go to the
 2 doctor.
 3 **Q. Now, your patient population -- the**
 4 **two-thirds of your patients who are**
 5 **transgender -- of those two-thirds, are you**
 6 **able to break it down between children,**
 7 **adolescents and adults?**
 8 ATTORNEY SMITH: Object to form.
 9 A. Yes. I actually -- at the same time, I
 10 looked at a few days of patients. It broke
 11 down to -- about a third of my patients were
 12 patients that I had started seeing in
 13 adolescence in my private practice. So some of
 14 them may have turned 18 -- might have been --
 15 may be legal adults by now.
 16 About a third were adults when they
 17 came into my private practice. And then the
 18 other third were cisgender. So just an
 19 approximate breakdown of a few days of patients
 20 that I looked at.
 21 **Q. I'll ask you a few more questions about**
 22 **your background. I noticed in your report,**
 23 **in -- in your initial report -- the first**
 24 **report that you did, in paragraph six, you say**

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1 **that you are the sole author of the chapter on**
 2 **transgender care in the American Psychiatric**
 3 **Press's Clinical Manual of Cultural Psychiatry,**
 4 **Second Edition.**
 5 **My question is, what is cultural**
 6 **psychiatry?**
 7 ATTORNEY SMITH: Object to form.
 8 A. So cultural psychiatry is an area of
 9 psychiatry that looks at differences between
 10 groups of patients and the psychiatrist. And
 11 so the differences include race and ethnicity,
 12 gender. And in this case, also gender
 13 identity.
 14 **Q. If I'm understanding correctly, you're**
 15 **saying that there are different -- well, let me**
 16 **ask you. Are you saying that there are**
 17 **different treatment methods for patients based**
 18 **upon their cultural experiences and identities?**
 19 **Am I kind of paraphrasing that correctly?**
 20 ATTORNEY SMITH: Object to form.
 21 A. Sure. So I think there are different
 22 considerations to be taken into account when a
 23 psychiatrist sees a patient who is different in
 24 one of many regards from the psychiatrist or

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1 different from the -- maybe the majority of the
 2 culture; for example, in the case of
 3 immigrants.
 4 So the psychiatrists who edit the book
 5 and the psychiatrists who focus on this work do
 6 focus on how -- the considerations you have to
 7 take into account with treatment.
 8 So there are certainly aspects that are
 9 the same. In terms of medication for example,
 10 there may be -- with some ethnicities, there
 11 may be different rates of -- as a whole of
 12 metabolism of the drug or differences between
 13 men and women. But many of the differences are
 14 not say how a drug works, but the approach
 15 between doctor and patient.
 16 **Q. Okay. If I'm understanding**
 17 **correctly -- you mentioned an example of an**
 18 **immigrant. So in taking that and kind of**
 19 **trying to go with that, someone moving -- let's**
 20 **just say to America from a different country --**
 21 **has experienced life in a different way than**
 22 **most Americans have, and therefore may need to**
 23 **have an approach to therapy different from what**
 24 **an American would respond to; is that accurate?**

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1 ATTORNEY SMITH: Object to form.
 2 A. That's accurate.
 3 **Q. Okay. And so could that applied**
 4 **across -- not just someone with a different**
 5 **immigration status or someone who's from a**
 6 **different country, but for things such as**
 7 **religion?**
 8 ATTORNEY SMITH: Object to form.
 9 A. Yes. I think that people's religion
 10 and spiritual beliefs should be taken into
 11 account by psychiatrists as well. And there
 12 are psychiatrists who focus on ways in which
 13 spiritual beliefs or religion may affect care
 14 and doctor/patient relationships.
 15 **Q. Okay. Can you explain how gender**
 16 **identity fits into that tenet of cultural**
 17 **psychiatry and how that changes the approach of**
 18 **a psychiatrist?**
 19 ATTORNEY SMITH: Object to form.
 20 A. Sure. So in this case, it was the
 21 approach to the transgender patient. And
 22 transgender patients have sets of experiences
 23 which are different. And so those can be
 24 living identified in the gender that feels

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1 alien to them. It also can be in terms of
 2 rejection or discrimination by family, peers,
 3 school. And it also reflects in health
 4 experiences because many transgender people
 5 have had negative health experiences. So the
 6 approach to a patient who may have had negative
 7 health experiences should be taken into
 8 account.
 9 **Q. So when you are treating a transgender**
 10 **patient, it's important for you to be taking**
 11 **into account things such as -- I think you said**
 12 **rejection by family, peers or school -- and**
 13 **also effect of health experiences that those**
 14 **individuals have had; is that right?**
 15 A. Yes.
 16 ATTORNEY SMITH: Object to form.
 17 **Q. Okay. And those are external things**
 18 **that are -- well, I'll ask you to explain it.**
 19 **Because from reading your reports, it's my**
 20 **understanding that it's your opinion that a**
 21 **transgender identity is entirely internal and**
 22 **not the effect of external forces; is that**
 23 **correct?**
 24 ATTORNEY SMITH: Object to form.

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1 A. Can you repeat the question?
 2 **Q. Sure. Anytime that I ask a bad**
 3 **question - because it will certainly happen -**
 4 **feel free to to ask me to correct it or ask it**
 5 **in a different way.**
 6 **There are statements in your report**
 7 **that -- and I'll read this. And you're**
 8 **quoting -- this is on page 5 of your initial**
 9 **report -- your original report in paragraph 21.**
 10 ATTORNEY SMITH: Caleb -- not to
 11 interrupt you -- but if you're going to
 12 refer to the report, would it help -- and
 13 just to let you know, I believe that
 14 Dr. Karasic has a copy of his report.
 15 But, you know, I just wanted to make
 16 sure that -- if necessary, you can also
 17 show it if -- that's your choice.
 18 MR. DAVID: Sure. I was just trying
 19 to speed things along if we all have it in
 20 front of us instead of going back and
 21 forth. If that's --
 22 A. I've got a copy of both reports that --
 23 the initial report and the rebuttal report just
 24 for this circumstance. So you can --

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1 **Q. Perfect. I'm happy to attach both.**
 2 **Because we'll talk about both reports. We'll**
 3 **attach both of them as exhibits so everyone**
 4 **knows what we're referring to, if that's good**
 5 **with everyone.**
 6 ATTORNEY SMITH: Thank you.
 7 **Q. So do you have your report in front of**
 8 **you, Doctor?**
 9 A. Yes.
 10 ATTORNEY SMITH: Actually, Caleb, can
 11 we do that now? Can we attach --
 12 MR. DAVID: Sure.
 13 Martha, we'll attach the expert
 14 disclosure report of Dan H. Karasic, M.D.,
 15 that has been filed in this case as
 16 Exhibit 1.
 17 (Exhibit 1 was marked.)
 18 MR. DAVID: And the -- let me get to
 19 the title of it -- the expert rebuttal
 20 report of Dan H. Karasic, M.D., as
 21 Exhibit 2.
 22 (Exhibit 2 was marked.)
 23 **Q. Exhibit 1 is your initial report -- the**
 24 **expert disclosure report of Dan H. Karasic,**

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1 **M.D. Do you have Exhibit 1 in front of you?**
 2 A. Yes.
 3 **Q. I'm looking at page 5, paragraph 21.**
 4 **And I'll read the first sentence, Gender**
 5 **identity is a person's deeply felt, inherent**
 6 **sense of being a girl, woman or female, a man**
 7 **or male, a blend of male or female or an**
 8 **alternative gender.**
 9 **And that is citing to the American**
 10 **Psychological Association, 2015.**
 11 A. Yes.
 12 **Q. And the next sentence says, Gender**
 13 **identity does not always align with sex**
 14 **assigned at birth. Gender identity, which has**
 15 **biological bases, is not a product of external**
 16 **influence and not subject to voluntary change.**
 17 **First, did I read that correctly?**
 18 A. Yes.
 19 **Q. Okay. So when you were talking about**
 20 **cultural psychiatry and taking into**
 21 **consideration the experience of individuals**
 22 **with transgender identities, you talked about**
 23 **some external things, such as rejection from**
 24 **family, peers, school, health experiences.**

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1 **And I'm asking if you can explain to me**
 2 **the difference between those external**
 3 **influences and the internal sense of self that**
 4 **you have stated as the definition of a gender**
 5 **identity?**
 6 ATTORNEY SMITH: Object to form.
 7 A. Sure. So as described in this
 8 definition from the American Psychological
 9 Association, gender identity is an internal
 10 sense of self. Societal discrimination is --
 11 or rejection is people's reactions to someone's
 12 perceived identity. So, you know, there is an
 13 internal experience that a transgender person
 14 has as well as, you know, an experience in
 15 society.
 16 **Q. And I think that I'm understanding you**
 17 **correctly. What my real question here is, is I**
 18 **guess about the reasons that gender identity**
 19 **exists at all. Can you explain what actually**
 20 **forms gender identity?**
 21 ATTORNEY SMITH: Object to form.
 22 A. So the -- there isn't a simple answer
 23 in terms of what forms a gender identity. You
 24 know, people know that there are biological

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1 underpinnings. And there have been sometimes
 2 interesting differences that illuminate what
 3 forms gender identity. Somebody with complete
 4 androgen insensitivity for example is XY in
 5 terms of their chromosome, but assigned female
 6 at birth. And they may not even know that
 7 their chromosomally XY until they go to a
 8 fertility doctor in adulthood.
 9 So what we have -- I'd say we have
 10 ideas of components, but it certainly -- part
 11 of our ongoing learning experience of all the
 12 different factors that lead to someone's
 13 particular gender identity.
 14 **Q. What percentage of transgender**
 15 **individuals have that androgen -- is it --**
 16 **instability, was that the word you used?**
 17 ATTORNEY SMITH: Object to form.
 18 A. Complete androgen insensitivity. Most
 19 of those people do not identify as transgender.
 20 Most people with complete androgen
 21 insensitivity identify as female. And it -- so
 22 that's a case where somebody is chromosomally
 23 XY, but their cells don't have androgen
 24 receptors. And so the presence of androgens

Page 21

1 in utero does not affect the embryo, and the
 2 embryo identities -- or the embryo develops
 3 as -- with an external female appearance
 4 despite being an XY. And most of those people
 5 identify as cisgender women.
 6 **Q. So what percentage of people experience**
 7 **that, where they're XY and have that androgen**
 8 **insensitivity?**
 9 ATTORNEY SMITH: Object to form.
 10 A. That's an uncommon circumstance.
 11 **Q. Okay. Are there other -- because --**
 12 **again, paragraph 21, you say, Gender identity**
 13 **which has biological bases. Are there other**
 14 **biological bases other than that situation that**
 15 **you've just discussed?**
 16 ATTORNEY SMITH: Object to form.
 17 A. So there does appear to be other
 18 biological bases in terms of in utero
 19 development -- somebody with congenital adrenal
 20 hyperplasia, for example. The embryo, which is
 21 XX, may be exposed to more androgens; and
 22 there's a higher percentage of people with a
 23 transgender identity.
 24 For example -- another example is

Page 22

1 just -- there's a whole body of research trying
 2 to characterize the physical size and
 3 structures basically in male brains versus
 4 female brains. And there's research that the
 5 brains of transgender people on average fit
 6 somewhere in between. So there's some evidence
 7 of a difference in biology. How that
 8 translates into somebody's gender identity
 9 though is -- you know, is so subject to
 10 certainly future research.

11 **Q. I know from reading your report you've**
 12 **been treating individuals with gender dysphoria**
 13 **for I believe -- was it 30 years?**

14 ATTORNEY SMITH: Object to form.

15 A. Yes.

16 **Q. Are you able to explain why there are**
 17 **gender norms that are attached to someone's**
 18 **external sex characteristics?**

19 ATTORNEY SMITH: Object to form.

20 A. Can you -- can you explain your
 21 question further?

22 **Q. Sure. Sure.**
 23 **So there are -- I'll just make this**
 24 **simpler. If you flip to page 6 of Exhibit 1 --**

Page 23

1 **your initial report -- there is a definition of**
 2 **gender dysphoria, the diagnostic criteria from**
 3 **DSM-5. And they talk about a strong desire to**
 4 **be of the other gender or some alternative**
 5 **gender from one's assigned gender. And they**
 6 **talk about an incongruence with one's**
 7 **experience and expressed gender and one's**
 8 **secondary -- primary or secondary sex**
 9 **characteristics.**

10 **So what I'm trying to understand is why**
 11 **there is a matching of certain gender identity**
 12 **markers with someone's external sex**
 13 **characteristics?**

14 ATTORNEY SMITH: Object to form.

15 A. So are you saying in
 16 cisgender-identified people, why they find
 17 their primary or secondary sex characteristics
 18 congruent?

19 **Q. Sure.**

20 A. Is that the question?

21 ATTORNEY SMITH: Object to form.

22 **Q. That is half of the question. The**
 23 **other half is for transgender individuals. But**
 24 **let's start with cisgender individuals. Why do**

Page 24

1 **they find that their gender identity and their**
 2 **external sex characteristics are congruent?**

3 ATTORNEY SMITH: Object to form.

4 A. Sure. So the establishment of gender
 5 identity in cisgender people -- perhaps because
 6 it's viewed as a default is maybe not
 7 researched as much. But we certainly know that
 8 these biological bases, whether it's, you know,
 9 brain structure, whether it's primary sex
 10 characteristics that led to the sex assigned at
 11 birth that -- most people, they're congruent.

12 When you look at -- for example, I was
 13 referring to brain research. And you look at
 14 male brains versus female brains for cisgender
 15 people, there actually is overlap. So we don't
 16 have -- the people who do this research don't
 17 have clear signifiers that -- of what is it
 18 about the brain that makes somebody 100 percent
 19 identify as male or female. But certainly
 20 there are differences in, you know, kind of
 21 populations as a whole.

22 **Q. And my question might even be**
 23 **unfortunately broader than that. Specifically**
 24 **when looking at the DSM-5 criteria for**

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1 **children, there is -- I will see if I can pull**
 2 **that up because I don't think that is contained**
 3 **within your report. Give me one second. I'll**
 4 **see if I can find that.**

5 I'll go ahead and share my screen here,
 6 Doctor, so you can see this. Can you see
 7 what's on my screen now, Doctor?

8 A. Yes.

9 **Q. Okay. So here is the diagnostic**
 10 **criteria under the DSM-5 for gender dysphoria**
 11 **in children. And what I'm asking about is --**
 12 **particularly looking at A3 and A4. So A3 says,**
 13 **a strong performance for cross-gender roles in**
 14 **make-believe play or fantasy play. And A4**
 15 **says, A strong preference for the toys, games,**
 16 **or activities stereotypically used or engaged**
 17 **in by the other gender.**

18 **So first, did I read that correctly?**

19 A. Yes.

20 **Q. What I'm trying to understand is why**
 21 **there are expectations that for instance, a**
 22 **child born with male external sex**
 23 **characteristics is supposed to play with**
 24 **certain toys or engage in certain games? Are**

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1 **you able to explain that?**
 2 ATTORNEY SMITH: Object to form.
 3 A. So first, I just want to point out that
 4 gender dysphoria in children is a separate
 5 diagnosis from gender dysphoria in adolescents
 6 and adults. And so they may be overlapping
 7 Venn diagrams perhaps might be a way to look at
 8 that. But having gender dysphoria in children
 9 is not necessarily the same thing as being a
 10 transgender person.
 11 So -- and there are differences in
 12 expected behaviors in boys and girls that
 13 certainly vary culturally and, you know, over
 14 time by a particular society at a particular
 15 time certainly has attributes and behaviors
 16 that it -- that are typically male and
 17 typically female.
 18 ATTORNEY SMITH: Caleb, can you mark
 19 this exhibit for clarity of the record?
 20 MR. DAVID: Let me -- before we do
 21 that, are you okay with doing a set number
 22 of pages for this? Because it's 970
 23 pages. I'm happy to mark the -- because
 24 this is the entire --

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1 ATTORNEY SMITH: Yes.
 2 MR. DAVID: I'm happy to mark the
 3 specific section on gender dysphoria. I
 4 just don't want to attach a 970-page
 5 document. If that's okay?
 6 ATTORNEY SMITH: That's okay.
 7 MR. DAVID: Let me see where that
 8 starts. Okay. So here is where gender
 9 dysphoria starts. It's PDF page 486,
 10 which is document page 451. And I'll mark
 11 that the whole way to here - if that works
 12 for you - which is PDF page 494 and
 13 document page 459. Is that agreeable?
 14 ATTORNEY SMITH: Yes.
 15 MR. DAVID: So we will make the
 16 gender dysphoria section of DSM-5
 17 Exhibit 3, Martha.
 18 (Exhibit 3 was marked.)
 19 Q. Okay. Doctor, you said that there
 20 are -- if I butcher this, please correct me.
 21 You said that there are cultural expectations
 22 for genders that are based on certain times and
 23 certain places; is that right?
 24 A. Yes.

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1 ATTORNEY SMITH: Object to form.
 2 **Q. Okay. And so if a person is born and**
 3 **is assigned male at birth and that person does**
 4 **not have a gender identity that conforms to the**
 5 **expectations of society, that person may**
 6 **develop a transgender identity; is that**
 7 **correct?**
 8 ATTORNEY SMITH: Object to form.
 9 A. Can you repeat that? Say it again for
 10 me.
 11 **Q. Sure. It's obviously a hypothetical,**
 12 **A person is born and assigned a male sex at**
 13 **birth.**
 14 A. Yes.
 15 **Q. And then later on has characteristics**
 16 **that are different from what society would**
 17 **expect that person to -- how that person acts,**
 18 **how that person interacts, the games they play.**
 19 **The toys they play with are different than from**
 20 **what society would expect someone who is**
 21 **assigned male at birth, that person may develop**
 22 **a transgender identity; is that correct?**
 23 ATTORNEY SMITH: Object to form.
 24 A. Some of those people do, and some

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1 don't.
 2 **Q. Okay. How do we know who will -- who**
 3 **will develop that transgender identity?**
 4 ATTORNEY SMITH: Object to form.
 5 A. So ultimately, it is people who develop
 6 more distress around aspects of their gender.
 7 That can include people who develop distress
 8 around physical aspects of their gender. It
 9 can be people who develop -- who insist -- if
 10 we're talking about children -- insisting on an
 11 identity other than the one assigned at birth
 12 and who have that in a persistent way. So not
 13 all the people who don't engage in
 14 gender-typical play develop a transgender
 15 identity.
 16 **Q. And that -- you said gender-typical**
 17 **play. Something being gender typical is based**
 18 **off of society expecting them to act a certain**
 19 **way based on the sex that they were assigned at**
 20 **birth; is that right?**
 21 ATTORNEY SMITH: Object to form.
 22 A. Yeah. I think that's a way to look at
 23 it, that there are -- outside of societal
 24 expectations, there are some that perhaps go

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1 more cross cultures, and there are some that
2 are very specific to -- more specific to a
3 culture and a time.
4 **Q. And to try -- not to say that all of**
5 **America is one culture. But to try to narrow**
6 **it from the entire world down to the United**
7 **States -- within the United States, gender**
8 **roles have changed from 1776 to today, right?**

9 ATTORNEY SMITH: Object to form.

10 A. Well, I wasn't around in 1776.
11 Although it feels like it sometimes. But I
12 think it is fair to say that gender
13 expectations have changed with time --

14 **Q. And --**

15 A. -- in the United States.

16 **Q. For instance, it really wasn't that**
17 **long ago that women were expected to not work**
18 **and to be at the home and they were expected to**
19 **raise children. And today, while there are**
20 **still a lot of people that probably still**
21 **believe that, that's not the norm of our -- of**
22 **America today, right?**

23 ATTORNEY SMITH: Object to form.

24 A. Right. There are now a wider variety

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1 **expectations to people based upon gender. For**
2 **instance, I don't -- people would identify me**
3 **as a male. I wouldn't say, yep, I'm**
4 **100 percent male, I don't have any feminine**
5 **characteristics or anything like that. I**
6 **certainly do. And that's simply who I am as a**
7 **person. I identify as myself.**

8 **So what I'm trying to understand is why**
9 **we have these expectations of people based on**
10 **their internal sex characteristics in the first**
11 **place. Is that something that you are able to**
12 **discuss and opine about?**

13 ATTORNEY SMITH: Object to form.

14 Object to scope.

15 A. Yeah. So I would say that there -- you
16 know, one has to look at social historians over
17 time. And there long have been
18 societally-assigned attributes to male and
19 female. And so I think that is something that
20 is, you know, part of humanity -- even as those
21 things change -- that there is that phenomenon
22 that certainly we can see, you know, going back
23 many, many years and in different cultures.

24 **Q. So when you are providing care to your**

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1 of expectations for women than there were in
2 the past.

3 **Q. So -- and again, this is hypothetical,**
4 **I grant you that, because I'm asking you to**
5 **accept the hypothetical and try to work with**
6 **it. Gender identities for individuals living**
7 **in 1900 might be different from gender**
8 **identities -- individuals living in 2022. Does**
9 **that make sense to you?**

10 ATTORNEY SMITH: Object to form.

11 A. I don't know if I would describe it
12 that way. I guess you can say that there
13 are -- you know, I think that people identified
14 as a male or female many, many years ago --
15 there may have been people who identified as
16 neither many years ago or were transgender, but
17 there was no -- nothing to, you know, do about
18 it. There are certain descriptors that people
19 apply to themselves for gender identity, like
20 nonbinary which were not present back then that
21 are present now.

22 **Q. So something that I just -- I can't**
23 **personally understand is why society has**
24 **attached certain behaviors or certain**

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1 **transgender patients, do you provide -- let me**
2 **just start over. You provide psychiatric care**
3 **to your transgender patients, correct?**

4 ATTORNEY SMITH: Object to form.

5 A. Correct.

6 **Q. Okay. And for a patient who is**
7 **transgender and has gender dysphoria -- which I**
8 **understand is not all of your transgender**
9 **patients, but ... So for a patient who is**
10 **transgender and has gender dysphoria, what does**
11 **your psychiatric treatment look like?**

12 ATTORNEY SMITH: Object to form.

13 A. I'm typically not -- my psychiatric
14 treatment that I am providing is typically for
15 co-occurring conditions. People come to me not
16 only because they're transgender, coming to me
17 as a psychiatrist specifically. Typically, not
18 only because they're transgender, but because
19 they have depression or anxiety or some other
20 psychiatric symptom.

21 So very often the focus of treatment is
22 the other psychiatric symptoms that people
23 have. There are people who are exploring their
24 gender identity. And so there can be work in

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1 terms of that exploration. There certainly can
 2 be people who are working on their reaction to
 3 how others around them respond to their gender
 4 identity.
 5 And so I'm not providing psychiatric
 6 treatment to -- you know, to change their
 7 gender identity. But I am treating the
 8 symptoms, you know, kind of around it that I
 9 can treat as a psychiatrist.
 10 **Q. So I think what you just said at the**
 11 **end there is kind of what my question is. So**
 12 **when you have a patient who has gender**
 13 **dysphoria, you can provide psychiatric**
 14 **counseling for how they react to the external**
 15 **factors, the perceptions of other people; is**
 16 **that correct?**
 17 ATTORNEY SMITH: Object to form.
 18 A. Yes.
 19 **Q. Are you able to provide -- or is it**
 20 **accepted to provide psychiatric counseling in**
 21 **terms of helping those individuals to accept**
 22 **themselves and how the outside world might**
 23 **perceive them?**
 24 ATTORNEY SMITH: Object to form.

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1 And, Dr. Karasic, before moving on,
 2 can we just pause so that I can make sure
 3 I can lodge my objections and make it
 4 easier for the court reporter?
 5 THE WITNESS: Yes. Thanks.
 6 A. Can you repeat or explain the question?
 7 **Q. Right. I'm not -- I want to be very**
 8 **clear about this. I'm not suggesting that**
 9 **there should be or there is psychiatric**
 10 **counseling that's aimed at trying to tell**
 11 **someone that they're not the gender identity --**
 12 **that they have the wrong gender identity or**
 13 **anything like that.**
 14 **But I know that there is psychiatric**
 15 **counseling for people for multiple conditions**
 16 **to help them to sort of accept their condition,**
 17 **accept themselves and to I guess not have as**
 18 **much of an effect on themselves from external**
 19 **forces.**
 20 **Is that something that is done with**
 21 **people who experience gender dysphoria?**
 22 ATTORNEY SMITH: Object to form.
 23 A. So are you asking whether I am doing
 24 treatment to try to steer people into not

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1 getting gender-affirming care?
 2 **Q. No. No, not that.**
 3 **I'm asking if there is a methodology or**
 4 **a treatment plan that can assist individuals**
 5 **with managing the symptoms of gender dysphoria**
 6 **separate from receiving hormone therapy or**
 7 **surgical therapy?**
 8 ATTORNEY SMITH: Object to form.
 9 A. So there's not a specific psychiatric
 10 treatment to cause relief from gender
 11 dysphoria.
 12 **Q. So when you are seeing patients with**
 13 **gender dysphoria, you are generally assisting**
 14 **them -- or providing therapy for other**
 15 **conditions, like depression and anxiety. What**
 16 **else are you doing for those patients with**
 17 **gender dysphoria?**
 18 ATTORNEY SMITH: Object to form.
 19 A. Sure. So I do work with them in terms
 20 of exploring their identity and their symptoms
 21 of gender dysphoria. I try to leave it to the
 22 patient to steer the ship in terms of whether
 23 or not -- or when they might get
 24 gender-affirming care.

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1 Sometimes people know they want
 2 gender-affirming care, but they can't get it at
 3 that time for example. Somebody living at home
 4 with parents or otherwise dependent on another
 5 person might be an example where they might
 6 need to postpone that.
 7 So I'm certainly working with the
 8 symptoms of gender dysphoria as -- among the
 9 symptoms that the person is experiencing
 10 without there being a specific psychiatric
 11 treatment for gender dysphoria.
 12 **Q. So on the -- you just mentioned**
 13 **gender-affirming care and -- how is it**
 14 **determined whether a patient needs or -- I'll**
 15 **just use the word "needs." Whether a patient**
 16 **needs gender-affirming care, hormone therapy or**
 17 **surgical therapy?**
 18 ATTORNEY SMITH: Object to form.
 19 A. Sure. So in practice -- first of all,
 20 there are some differences. There are
 21 differences between adolescents seeking
 22 gender-affirming care and adults. And
 23 practices also -- I think a difference between
 24 when someone is exploring their gender identity

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1 or unsure of the kind of gender-affirming care
 2 they might want or if or when they might want
 3 it.
 4 And then there are other people who for
 5 example have lived in the gender in which they
 6 identify for extended periods of time, where
 7 gender identity and what they want to do about
 8 it is not really in question. I think there's
 9 a whole range of approaches depending on the
 10 patient.
 11 **Q. Let's start with adults. The two**
 12 **plaintiffs in this case are adults.**
 13 A. Uh-huh.
 14 **Q. How do you determine whether -- well,**
 15 **let me just start over here.**
 16 **So if you were going to recommend a**
 17 **course of treatment for a patient -- I assume**
 18 **that there has to be indications for that**
 19 **course of treatment, correct?**
 20 ATTORNEY SMITH: Object to form.
 21 A. Yes. So I think that certainly the
 22 presence of a diagnosis of gender dysphoria
 23 where somebody has had persistent and prominent
 24 in some ways distress related to their gender

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1 dysphoria. And of course having the capacity
 2 to consent for care. I think those are
 3 essential factors for an adult seeking
 4 hormones.
 5 **Q. So not all adults who are diagnosed**
 6 **with gender dysphoria undergo hormonal or**
 7 **surgical treatment, correct?**
 8 ATTORNEY SMITH: Object to form.
 9 A. Yes. As I said, we presume that
 10 because of differences in statistics between
 11 how many people are in clinical care and how
 12 many people identify as transgender --
 13 presumably many of the people who identify as
 14 transgender, you know, aren't coming to me.
 15 And so they may -- they may have some level of
 16 distress that is not severe enough that they
 17 need relief from transitioning.
 18 **Q. So how is there a determination whether**
 19 **someone's level of distress is severe enough to**
 20 **require those medical or surgical treatments?**
 21 ATTORNEY SMITH: Object to form.
 22 A. So I think that a good guide is the
 23 DSM-5 diagnosis. Clinically significant
 24 distress, social and occupational impairment so

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1 that the distress of gender dysphoria is
 2 significantly affecting their life.
 3 ATTORNEY SMITH: Caleb, not to
 4 interrupt you -- we've been going for a
 5 little bit -- for an hour now. Can we go
 6 ahead and take a break for a minute?
 7 MR. DAVID: Absolutely. You want to
 8 take five minutes?
 9 ATTORNEY SMITH: Yes. That works.
 10 VIDEOGRAPHER: We are going off the
 11 record at 1300.
 12 (Break in proceedings.)
 13 VIDEOGRAPHER: We are back on the
 14 record at 1306.
 15 BY MR. DAVID:
 16 **Q. Doctor, before we took a break, I was**
 17 **asking some questions about how the**
 18 **determination is made that someone's distress**
 19 **from gender dysphoria rises to the level of**
 20 **needing medical or surgical treatment. You**
 21 **referred me to the DSM-5 and the discussion on**
 22 **clinical -- clinically significant distress.**
 23 **Is that where we were?**
 24 ATTORNEY SMITH: Object to form.

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1 A. Yes.
 2 **Q. Okay. Is there a diagnostic test to**
 3 **determine whether someone's stress (sic) is**
 4 **clinically significant?**
 5 ATTORNEY SMITH: Object to form.
 6 A. Whether someone's distress is
 7 clinically significant?
 8 **Q. Yes.**
 9 A. So that is determined in the course of
 10 psychiatric evaluation; not by a specific
 11 distress test, but using the clinical judgment
 12 of the clinician.
 13 **Q. So we had broken this down -- because I**
 14 **had asked you a very broad question. And you**
 15 **said that it would be different for adults,**
 16 **adolescents and children. So let me ask you --**
 17 **adolescents, how do you determine whether that**
 18 **individual requires or needs medical or**
 19 **surgical therapy for gender dysphoria?**
 20 ATTORNEY SMITH: Object to form.
 21 A. Sure. So we -- if I am going by my
 22 clinical practice and that of a child in the
 23 Adolescent Gender Center at UCSF, we -- as well
 24 as I think guidance from WPATH, we agree that

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1 adolescents require more evaluation -- a
2 longer-term evaluation, especially if just
3 presenting with gender dysphoria in
4 adolescence. So it's typically not the work
5 that I do, although there have been times when
6 I have. But it's typically not the work that I
7 do because it's -- I will typically refer them
8 to some of my psychotherapist colleagues to
9 meet with the adolescent over time and to make
10 a determination in terms of whether -- along
11 with the patient, along with the patient's
12 parents. There is a -- they can come to an
13 agreement in terms of what is or isn't to be
14 done next.

15 **Q. Why do you refer those patients to
16 psychotherapist colleagues rather than make
17 that determination yourself?**

18 ATTORNEY SMITH: Object to form.

19 A. So I have limited time. I had limited
20 time when I was at a UCFS faculty member. And
21 I have limited time now, and so -- and this is
22 often a time-intensive process.

23 So I have had -- at times there have
24 been, you know, adolescents where I have done

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1 **treatment for gender dysphoria to children?**

2 ATTORNEY SMITH: Object to form.

3 A. No.

4 **Q. So in your practice, have you
5 recommended to adolescents that they undergo
6 medical therapy, so hormonal therapy?**

7 ATTORNEY SMITH: Object to form.

8 A. So I would say that it is -- I would
9 say that we let the adolescent bring that up
10 first, and then explore it as opposed to, for
11 example, my pushing forward with any particular
12 direction for that adolescent.

13 So the adolescent might bring up
14 that -- you know, having distress where they
15 want a particular intervention. As I said,
16 typically, I'll refer them to a therapist to
17 work with them more intensively before making a
18 recommendation to -- for example, call the
19 Child and Adolescent Center at UCSF.

20 **Q. So if a patient brings up a potentially
21 medical or surgical transition, do you always
22 refer that patient out to a separate gender
23 clinic?**

24 ATTORNEY SMITH: Object to form.

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1 that work. But typically I will refer them to
2 psychotherapists who do that work as a regular
3 thing in their practice and have the time to
4 devote to that individual for psychotherapy, to
5 do that work.

6 **Q. And if you know, what is the purpose of
7 the psychotherapy that is provided to those
8 adolescents?**

9 ATTORNEY SMITH: Object to form.

10 A. Sure. So it depends on the adolescent.
11 But it can be to help them explore -- not only
12 their identity, but whether or not they want to
13 take steps -- if we're talking specifically in
14 the context of gender-affirming care -- whether
15 or not that is a next step for them.

16 And so that's work done with a
17 therapist getting to know their client and
18 getting to know the client's parents and
19 assessing the degree of distress and the
20 persistence of that distress that might be
21 relieved by gender-affirming care.

22 **Q. Okay. So do you treat children? And
23 when I say children, I mean people younger than
24 adolescents. Do you provide psychiatric**

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1 A. So I typically refer them to the Child
2 and Adolescent Center. Most of my patients --
3 almost all of my adolescent transgender
4 patients are already in therapy. But some
5 don't have therapists. If they don't, I refer
6 them out to a therapist.

7 So the Child and Adolescent Center
8 requires that somebody -- that an adolescent
9 works with a mental health provider to start
10 that person on hormones. And generally that's
11 not me. That's the -- it's the psychotherapist
12 that they're working with.

13 **Q. Do you prescribe hormones to patients?**

14 A. No.

15 ATTORNEY SMITH: Object to form.

16 **Q. I didn't hear your answer, Doctor. I'm
17 sorry.**

18 A. No.

19 **Q. Do you write letters to potential
20 prescribing physicians recommending hormone
21 therapy?**

22 ATTORNEY SMITH: Object to form.

23 A. So for adult patients, yes. I will say
24 that many patients -- many adult patients can

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1 go to a primary care endocrinology physician
 2 who has expertise in taking care of transgender
 3 people who might do that evaluation themselves.
 4 So not all of those physicians require a letter
 5 from me for adult patients to start hormones.
 6 **Q. Okay. For adolescent patients, do you**
 7 **write letters to recommend that they start**
 8 **hormone therapy?**
 9 ATTORNEY SMITH: Object to form.
 10 A. No. I refer them -- that letter is
 11 done by their psychotherapist.
 12 **Q. Okay. So am I correct in understanding**
 13 **that you only recommend medical or surgical**
 14 **treatment of gender dysphoria in adults?**
 15 ATTORNEY SMITH: Object to form.
 16 A. I wouldn't put it that way. I would
 17 say that -- if you're asking who I write
 18 letters to, it would -- I would write a letter
 19 if required by the primary care or
 20 endocrinology physician or medical provider.
 21 If they require a mental health letter, then I
 22 will do that.
 23 Sometimes it's in a circumstance where
 24 somebody has a co-occurring condition. So the

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1 primary care physician or endocrinologist is
 2 concerned, for example, about that. And so
 3 even some of the doctors who will do their own
 4 assessment, there are times when they want to
 5 hear from me also.
 6 **Q. Why is it important to understand the**
 7 **co-occurring conditions prior to starting**
 8 **someone on hormone therapy?**
 9 ATTORNEY SMITH: Object to form.
 10 A. Just thinking of a very recent example,
 11 providing care for a transgender woman who was
 12 already on estradiol and spironolactone,
 13 already on hormones, had wanted -- or had asked
 14 her physician to also start progesterone, which
 15 she thought might help stir some breast growth
 16 because she wasn't getting much breast growth.
 17 And the physician asked to speak to me
 18 because sometimes there can be mood instability
 19 with progesterone. And this particular patient
 20 was seeing me for mood instability. You know,
 21 asking me both, was it okay to start
 22 progesterone, and also having just a plan to
 23 follow up with the patient in case they had
 24 additional mood instability.

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1 So that's just an example of when I
 2 might -- in that case, it wasn't a letter. It
 3 was, you know, a direct communication between
 4 the primary care provider and myself.
 5 **Q. So in that instance, the primary care**
 6 **provider was ensuring that there wasn't a**
 7 **contraindication to the medication itself based**
 8 **upon the patient's co-occurrent condition,**
 9 **correct?**
 10 ATTORNEY SMITH: Object to form.
 11 A. Yes. That there wasn't a
 12 contraindication. And also that there was a
 13 care plan in case there were any mental health
 14 side effects.
 15 **Q. Are there co-occurrent conditions that**
 16 **would generally exclude a patient from**
 17 **consideration for hormonal therapy?**
 18 ATTORNEY SMITH: Object to form.
 19 A. So I think in a broad way people have
 20 to be able to consent to medications. So any
 21 condition -- like delirium or dementia, that
 22 might impair people's ability to consent. Or
 23 somebody who is in a psychotic episode; there's
 24 schizophrenia, or an acute manic episode or

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1 bipolar disorder.
 2 So those are examples certainly where,
 3 you know, mental disorder would preclude
 4 gender-affirming care at least until it was --
 5 until or unless it could be treated so they
 6 were able to give informed consent.
 7 **Q. Again, if I'm understanding correctly,**
 8 **it's not that someone with bipolar disorder,**
 9 **that means that they can't have**
 10 **gender-affirming care? It's that their bipolar**
 11 **disorder has to be stable before they're**
 12 **provided gender-affirming care?**
 13 ATTORNEY SMITH: Object to form.
 14 A. Yes. And in Standards of Care 7, it's
 15 listed as being, you know -- well controlled is
 16 the adjective that they use. But the
 17 importance is that they -- that they're able to
 18 give informed consent, that they're able to
 19 participate in care in terms of aspects of what
 20 is well controlled.
 21 **Q. And since you just mentioned it, I'll**
 22 **ask you a question. The Standards of Care,**
 23 **that's a bit of a misnomer, isn't it?**
 24 ATTORNEY SMITH: Object to form.

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<p>1 A. Was that a question?</p> <p>2 Q. Yes.</p> <p>3 A. Well --</p> <p>4 ATTORNEY SMITH: Object to form.</p> <p>5 A. -- I think if we look historically that</p> <p>6 WPATH and its predecessor organization</p> <p>7 established the Standards of Care as standards</p> <p>8 of care for the field. I think that they've</p> <p>9 also been described as practice guidelines.</p> <p>10 Q. I don't think anyone will disagree that</p> <p>11 they're practice guidelines. But just saying</p> <p>12 we publish the Standards of Care probably</p> <p>13 doesn't mean that it is the standard of care</p> <p>14 and that if someone does not comply with that</p> <p>15 that they're committing malpractice, right?</p> <p>16 ATTORNEY SMITH: Object to form.</p> <p>17 A. So I think there is still -- there's</p> <p>18 still a belief that they are trying to set</p> <p>19 standards of care as well as practice</p> <p>20 guidelines. And within the standards of care,</p> <p>21 there certainly is a flexibility and deference</p> <p>22 to clinical judgment.</p> <p>23 So it's not something that is -- well,</p> <p>24 I don't remember exactly how you put it. But I</p>	<p>1 Grading of Recommendations, Assessment,</p> <p>2 Development and Evaluation group?</p> <p>3 ATTORNEY SMITH: Object to form.</p> <p>4 A. Yes.</p> <p>5 Q. And my -- you are probably more</p> <p>6 familiar with GRADE than I am. But my</p> <p>7 understanding is that GRADE has different</p> <p>8 applications regarding whether you're reviewing</p> <p>9 evidence or you're making treatment</p> <p>10 recommendations. Is that your understanding?</p> <p>11 ATTORNEY SMITH: Object to form.</p> <p>12 A. Yes. I would agree with that standard.</p> <p>13 Q. Okay. And GRADE also has rankings for</p> <p>14 how strong evidence is, correct?</p> <p>15 ATTORNEY SMITH: Object to form.</p> <p>16 A. Yes. Yes.</p> <p>17 Q. Okay. And it also has -- and I think</p> <p>18 it's just a strong and weak dichotomy. But</p> <p>19 they also look at -- for recommendations, they</p> <p>20 make them either strong recommendations or weak</p> <p>21 recommendations; is that right?</p> <p>22 ATTORNEY SMITH: Object to form.</p> <p>23 A. So, yes, there are different gradients</p> <p>24 of recommendations that can be made that are</p>
<p>1 think there still are aspirations to -- you</p> <p>2 know, that these clinical guidelines are also</p> <p>3 those that are agreed upon by people who are</p> <p>4 leaders in the field in terms of clinical care,</p> <p>5 including academic care. So I think that there</p> <p>6 are -- while the name Standards of Care came</p> <p>7 out of the history of the organization, I think</p> <p>8 there are still aspirations of being the</p> <p>9 standard -- providing a standard of care for</p> <p>10 transgender people.</p> <p>11 Q. I'm going to make a very, very poor</p> <p>12 transition here to ask you about essentially</p> <p>13 grading evidence and looking at evidence. Do</p> <p>14 you consider yourself to be an expert in</p> <p>15 analyzing clinical evidence?</p> <p>16 ATTORNEY SMITH: Object to form.</p> <p>17 A. So I certainly have expertise from --</p> <p>18 in evaluating clinical evidence from my many</p> <p>19 years as a health academic, from training in</p> <p>20 medical school, from training and a fellowship</p> <p>21 that I did. So I do view myself as somebody</p> <p>22 who is knowledgeable. But it's also not the</p> <p>23 focus of my work.</p> <p>24 Q. Are you familiar with grade -- the</p>	<p>1 based on -- in what way the evidence was</p> <p>2 derived.</p> <p>3 Q. I want to talk about the Endocrine</p> <p>4 Society Guidelines. But first are -- is WPATH</p> <p>5 Standards of Care 7 -- has that been evaluated</p> <p>6 using the GRADE scale?</p> <p>7 ATTORNEY SMITH: Object to form.</p> <p>8 A. The GRADE scale was not part of the</p> <p>9 development of Standards of Care 7. It is</p> <p>10 being used more in Standards of Care 8.</p> <p>11 Q. Okay. I will pull this up because I'm</p> <p>12 going to ask you probably more questions than</p> <p>13 either one of us want about these -- the</p> <p>14 Endocrine Society Guidelines. Are you able to</p> <p>15 see those? I'll scroll up to the top first.</p> <p>16 A. Okay.</p> <p>17 Q. Are you able to see that on your</p> <p>18 screen?</p> <p>19 A. Yes.</p> <p>20 MR. DAVID: We'll go ahead and mark</p> <p>21 the Endocrine Treatment of</p> <p>22 Gender-Dysphoric/Gender-Incongruent</p> <p>23 Persons: An Endocrine Society Clinical</p> <p>24 Practice Guideline as Exhibit 4.</p>

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1 Do I have that right, Martha? We're
 2 on four?
 3 THE COURT REPORTER: Yes.
 4 (Exhibit 4 was marked.)
 5 Q. You refer to these guidelines in your
 6 reports, correct?
 7 A. Yes.
 8 Q. Okay. And my understanding from the
 9 first page of this is that they did -- it
 10 says -- and I'll read under evidence. The last
 11 sentence of that section says, The task force
 12 commissioned two systematic reviews and used
 13 the best available evidence from other
 14 published systematic reviews and individual
 15 studies.
 16 First, did I read that correctly?
 17 A. Yes.
 18 Q. And is that your understanding of the
 19 methodology of this particular guideline?
 20 A. Yes.
 21 Q. Now, looking through -- I'm going to
 22 scroll down to -- and I'll read off the number
 23 that's in the corner. The document number is
 24 3870. And at this point, there is a summary of

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1 recommendations for -- the first one is for
 2 evaluation of youth and adults, correct?
 3 A. Yes.
 4 Q. And we're going to come back to this.
 5 But I just wanted to kind of orient everyone.
 6 They also have 2.0, the treatment of
 7 adolescents, correct?
 8 A. Yes.
 9 Q. 3.0, hormonal therapy for transgender
 10 adults, correct?
 11 A. Yes.
 12 Q. 4.0, adverse outcome and prevention and
 13 long-term care, correct?
 14 A. Yes.
 15 Q. 5.0, surgery for sex reassignment and
 16 gender confirmation, correct?
 17 A. Yes.
 18 Q. Now, here is -- and this is on
 19 page 3872. They have the Method of Development
 20 of Evidence-Based Clinical Practice Guidelines.
 21 And if we read this -- and I'll kind of
 22 highlight the portion that I'm talking about.
 23 It says that the task force followed the
 24 approach recommended by the Grading of

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1 Recommendations, Assessment, Development and
 2 Evaluation group, an international group with
 3 expertise in the development and implementation
 4 of evidence-based guidelines.
 5 Did I read that correctly?
 6 A. Yes.
 7 Q. And that's just a long-winded way of
 8 saying that they used the GRADE scale, right?
 9 A. Yes.
 10 ATTORNEY SMITH: Object to form.
 11 Q. And if we come down here, it says --
 12 well, I'll just continue reading so I'm not
 13 doing this out of context -- a detailed
 14 description of the grading scheme has been
 15 published elsewhere. They have a notation to
 16 that. The task force used the best available
 17 research evidence to develop the
 18 recommendations. The task force also used
 19 consistent language and graphical descriptions
 20 of both the strength of a recommendation and
 21 the quality of evidence.
 22 Did I read that correctly?
 23 A. Yes.
 24 Q. And do you understand that the strength

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1 of the recommendation is what we talked about
 2 and how they evaluate recommendations under the
 3 GRADE scale?
 4 ATTORNEY SMITH: Object to form.
 5 A. That the -- yeah. You're saying
 6 graphical descriptions of both the strength of
 7 the recommendation and the quality of
 8 evidence -- are you asking, is that --
 9 that's -- in terms of the descriptors that they
 10 then list, we recommend and we suggest, and the
 11 cross-filled circles indicate the quality of
 12 evidence?
 13 Q. Right. So if they make a strong
 14 recommendation, they say "we recommend," and
 15 they use the number one; is that right?
 16 A. Yes.
 17 Q. And if they make a weak recommendation,
 18 they use the phrase "we suggest" and the number
 19 two; is that right?
 20 ATTORNEY SMITH: Object to form.
 21 A. Yes.
 22 Q. And then they have these cross-filled
 23 circles. And if there's one cross-filled
 24 circle, that's for very low quality evidence,

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1 correct?
 2 ATTORNEY SMITH: Object to form.
 3 A. Yes.
 4 **Q. Two cross-filled circles is low quality**
 5 **evidence, correct?**
 6 ATTORNEY SMITH: Object to form.
 7 **Q. Yes. I'll just do the last two. Three**
 8 **cross-filled circles is moderate quality of**
 9 **evidence, correct?**
 10 ATTORNEY SMITH: Object to form.
 11 A. Yes.
 12 **Q. And four cross-filled circles are high**
 13 **quality evidence, correct?**
 14 ATTORNEY SMITH: Object to form.
 15 A. Yes.
 16 **Q. So I said that we were going to go**
 17 **back, and we are. So we've talked a little**
 18 **bit -- and we haven't gotten through all of**
 19 **this yet. But the summary of recommendations**
 20 **here, 1.0, The evaluation of youth and adults.**
 21 **And this particular -- and we can go through**
 22 **these one by one if you'd like.**
 23 **But 1.1 says, We advise that only**
 24 **trained mental health professionals - MHPs -**

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1 **who meet the following criteria should diagnose**
 2 **gender dysphoria/gender incongruence in adults.**
 3 **One, competence in using the diagnostic and**
 4 **statistical manual of mental disorders, DSM**
 5 **and/or the International Statistical**
 6 **Classification of Diseases and Related Health**
 7 **Problems, ICD, for diagnostic purposes.**
 8 **Two, the ability to diagnose GD/gender**
 9 **incongruence and make a distinction between**
 10 **GD/gender incongruence and conditions that have**
 11 **similar features, e.g., body dysmorphic**
 12 **disorder.**
 13 **Three, training and diagnosing**
 14 **psychiatric conditions.**
 15 **Four, the ability to undertake or refer**
 16 **for appropriate treatment.**
 17 **Five, the ability to psychosocially**
 18 **assess the person's understanding, mental**
 19 **health and social conditions that can impact**
 20 **gender-affirming hormone therapy.**
 21 **And six, a practice of regularly**
 22 **attending relevant professional meetings.**
 23 **Did I read that correctly, Doctor?**
 24 A. Yes.

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1 **Q. Okay. And that is -- they didn't grade**
 2 **that? They say it's a good practice statement,**
 3 **correct?**
 4 A. Yes.
 5 **Q. Okay. Now I'm going to skip ahead just**
 6 **so that we can look at what I'm pointing out**
 7 **here. So now let's like at 1.4. It says, We**
 8 **recommend against puberty blocking and**
 9 **gender-affirming hormone treatment in**
 10 **prepubertal children with GD/gender**
 11 **incongruence.**
 12 **Did I read that correctly?**
 13 A. Yes.
 14 **Q. And number one means that that's a**
 15 **strong recommendation, correct?**
 16 A. No. I think that -- oh, one there?
 17 Yeah. I'm sorry.
 18 **Q. I'm sorry. I mean, within 1.4 where**
 19 **they have the parentheses at the end. The**
 20 **number one means it's a strong recommendation?**
 21 ATTORNEY SMITH: Object to form.
 22 A. Yeah. I think I would need to go back
 23 to where they've described the one and two.
 24 But I believe that's how they described it.

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1 **Q. Sure.**
 2 A. So in terms of strength of the
 3 recommendation -- strong recommendations use
 4 the phrase "we recommend" in the number one.
 5 Weak recommendations, "we suggest" in the
 6 number two. So the number one there is a
 7 strong recommendation.
 8 **Q. Okay. And having two cross-filled**
 9 **circles means it's based on low quality**
 10 **evidence, correct?**
 11 ATTORNEY SMITH: Object to form.
 12 A. So you also have to look at -- within
 13 the GRADE scoring of what low quality and high
 14 quality evidence means. And basically if you
 15 don't have a randomized double-blind,
 16 placebo-controlled trial, the evidence score is
 17 lower. And that's not something that is
 18 ethically or practically possible in many of
 19 these -- for many of these statements.
 20 **Q. Okay. And so I think you said**
 21 **randomized, double-blind, placebo-controlled**
 22 **trial. Would that be high quality of evidence?**
 23 ATTORNEY SMITH: Object to form.
 24 A. Yes. Within the GRADE scoring, the

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1 higher scores go to those kind of randomized
2 trials as opposed to other research -- other
3 types of research that generally are considered
4 less strong basically in terms of the evidence
5 they provide.

6 **Q. Okay. So if I'm understanding**
7 **correctly, there isn't going to be that level**
8 **of evidence for any treatment related to gender**
9 **dysphoria because it would be unethical to have**
10 **a control group that you're withholding**
11 **treatment from, is that a correct**
12 **understanding?**

13 ATTORNEY SMITH: Object to form.

14 A. Yes.

15 **Q. Okay. So -- and I'll go back to that**
16 **scale so that we're all looking at the same**
17 **thing. I will highlight it as well. When**
18 **we're talking about the cross-filled circles --**
19 **we just talked about what is high quality.**
20 **That's kind of hiding it. As you can see where**
21 **the cross-filled circles are -- we just talked**
22 **about high quality of evidence and what's**
23 **required for that. What is required for**
24 **moderate quality of evidence?**

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1 ATTORNEY SMITH: Object to form.

2 A. I would -- I guess I would have to see
3 what they -- how they consider each level of
4 quality. But generally high quality are these
5 randomized trials. And then you can look at
6 other types of studies and rank them in terms
7 of being lower than high quality.

8 **Q. Do you know where on the GRADE scale a**
9 **systematic review of prospective studies would**
10 **fall?**

11 ATTORNEY SMITH: Object to form.

12 A. A systematic review of prospective
13 studies would -- I think would fall in the
14 middle from observational -- between
15 observational evidence and a randomized
16 clinical trial.

17 **Q. Okay. We'll come back to this, but**
18 **I'll stop sharing for now.**

19 Let me ask you about something that was
20 in your report here. So in your rebuttal
21 report, which we've marked as Exhibit 2 to your
22 deposition -- do you have that in front of you?

23 A. I'm sorry. Can you repeat that?

24 **Q. Sure. Do you have your rebuttal report**

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1 **which we've marked as Exhibit 2 to your**
2 **deposition?**

3 A. Sure. Let me put that in front of me.

4 Okay. I have it in front of me.

5 **Q. If you'll flip to page 3, and it's**
6 **paragraph 11. I'll go ahead and read it, and**
7 **I'll ask you some questions about it. Puberty**
8 **blockers may be indicated at Tanner Stage 2 of**
9 **puberty if the onset of physical changes of**
10 **puberty is causing distress. Puberty blockers**
11 **allow the child time to better understand their**
12 **gender identity under the care of a mental**
13 **health professional while delaying distress**
14 **from the progression of the development of**
15 **secondary sex characteristics. These**
16 **treatments are reversible and if stopped, the**
17 **youth will undergo a normal puberty.**

18 So first, other than that brief
19 stutter, did I read that correctly?

20 A. Yes.

21 **Q. Okay. Can you explain what Tanner**
22 **Stage 2 is?**

23 ATTORNEY SMITH: Object to form.

24 A. Tanner Stage 2 is the first evidence

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1 that a pediatrician on examination may see to
2 determine that the early onset -- I mean, the
3 beginning -- the onset of puberty.

4 **Q. Okay. Is there an age range for when**
5 **someone enters Tanner Stage 2?**

6 ATTORNEY SMITH: Object to form.

7 A. Yes. It has been getting earlier in
8 the U.S. And I think it's earlier than in
9 other countries. But it commonly happens
10 between age nine and 12. So a little younger I
11 think for people assigned female at birth.

12 **Q. And because we've already discussed**
13 **that you are not treating children - meaning**
14 **people younger than adolescents - I wanted to**
15 **ask what the basis is for the next sentence.**
16 **The puberty blockers allow the child time to**
17 **better understand their gender identity under**
18 **the care of a mental health professional while**
19 **delaying distress from the progression of the**
20 **development of secondary sex characteristics.**

21 ATTORNEY SMITH: Object to form.

22 A. Sure. So puberty blockers halt the
23 progression of puberty. And during that time,
24 it may prevent an increase in distress from the

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<p>1 patient because -- for example, breast 2 development is halted while they're on puberty 3 blockers.</p> <p>4 And so -- as opposed to, let's say, 5 going directly to hormones, you could have some 6 time where a child could work with their 7 therapist to get a better understanding of 8 their gender identity and whether or not it 9 makes sense to precede to cross-sex hormones.</p> <p>10 During that time, it still is possible, 11 if the patient and parents don't want to 12 precede to cross-sex hormones, to stop puberty 13 blockers and the patient's body will resume 14 puberty off of puberty blockers.</p> <p>15 Q. So if a patient is started on puberty 16 blockers during Tanner Stage 2 and later 17 decides that they don't want to transition, 18 they can stop puberty blockers and resume 19 normal puberty?</p> <p>20 ATTORNEY SMITH: Object to form.</p> <p>21 A. Yes. We know this from the original 22 use of puberty blockers which was on people 23 with premature puberty where these drugs are 24 used to delay the onset of puberty until it's</p>	<p>1 allow for a normal progression of puberty 2 following stopping the drugs?</p> <p>3 ATTORNEY SMITH: Object to form.</p> <p>4 A. So you're asking -- can you rephrase 5 the question, or help me understand what you're 6 asking?</p> <p>7 Q. I told you I'd ask some bad questions. 8 So what I'm trying to understand is, 9 you said Tanner Stage 2 is generally age nine 10 to 12. I'll just pick ten years old. If a 11 child is started on puberty blockers at age ten 12 and decides at a later time that they don't 13 want to transition, is there a point in time 14 where there will be effects?</p> <p>15 ATTORNEY SMITH: Object to form.</p> <p>16 Sorry.</p> <p>17 MR. DAVID: No. You're fine.</p> <p>18 A. My Zoom -- sorry. My computer tried to 19 automatically update Microsoft Office. So my 20 Zoom has disappeared. Are you still on there?</p> <p>21 MR. DAVID: Let's go off the record 22 for a minute, and we'll see if we can get 23 you back on.</p> <p>24 VIDEOGRAPHER: Going off the record</p>
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<p>1 more in line with the child's peers. And the 2 people who undergo that treatment seem to have 3 normal adolescent development at that point.</p> <p>4 Q. Okay. So in the instance of -- is the 5 term precocious -- is that --</p> <p>6 A. Precocious puberty.</p> <p>7 ATTORNEY SMITH: Object to form.</p> <p>8 Q. Thank you, Doctor.</p> <p>9 So in the instance of a child with 10 precocious puberty, that child might be placed 11 on puberty blockers to delay puberty until 12 the -- I don't want to say normal because 13 everyone is different -- until a more in 14 line -- a time frame in line with their peers 15 generally, and then the puberty progresses from 16 that point at the same general rate as their 17 peers? Is that how it works for precocious 18 individuals?</p> <p>19 ATTORNEY SMITH: Object to form.</p> <p>20 A. Yes.</p> <p>21 Q. In the instance of a child with gender 22 dysphoria who is starting puberty blockers 23 Tanner Stage 2, is there a time frame where the 24 puberty blockers would have to be halted to</p>	<p>1 at 1351.</p> <p>2 (Break in proceedings.)</p> <p>3 VIDEOGRAPHER: We are back on at 4 1353.</p> <p>5 BY MR. DAVID:</p> <p>6 Q. Doctor, before we took the break, I was 7 making some poor attempts at asking you some 8 questions. I'll try again here. If a child is 9 started on puberty blockers at age ten, is 10 there a deadline for when the child will have 11 to stop taking puberty blockers to resume the 12 normal progression of puberty afterwards?</p> <p>13 ATTORNEY SMITH: Object to form.</p> <p>14 A. Again, I don't make these 15 determinations. But there are health providers 16 who believe that after about two years on 17 puberty blockers, one might consider cross-sex 18 hormones. And there are other providers who 19 may believe in a set age. So it seems like 20 there is some difference in practice.</p> <p>21 But I think that they're -- that 22 pediatricians do tend to believe at some point, 23 perhaps two years, at whatever their belief is 24 that cross -- that it would be good to start</p>

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1 cross-sex hormones.

2 **Q. Okay. Let's go back to your expert**

3 **rebuttal report that's been marked as**

4 **Exhibit 2 and look at paragraph 12. I'll read**

5 **it first. It is not until later in adolescence**

6 **when the adolescent and parents in consultation**

7 **with mental health professionals and**

8 **pediatricians have had time to ensure that**

9 **change in gender identity is unlikely, that the**

10 **adolescent may start cross-sex hormones with**

11 **the consent of parents and agreement with**

12 **mental health and medical professionals.**

13 **First, did I read that correctly?**

14 A. Yes.

15 **Q. So there's a clause in there that says**

16 **"have had time to ensure that change in gender**

17 **identity is unlikely."**

18 **So first, can you explain what that**

19 **means?**

20 ATTORNEY SMITH: Object to form.

21 A. Sure. So there's exploration with the

22 therapist that their gender identity has

23 persisted over time. And so there is work that

24 has a start date with a therapist, and it gives

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1 them some time to have worked with the

2 therapist -- for the therapist to believe that

3 this person's gender identity is stable, that

4 the person is -- in this case, would have a

5 cross-sex identity that's stable in order to

6 start gender-affirming hormones.

7 Did I answer your question?

8 **Q. I think so for the most part.**

9 **So are there patients who have a**

10 **transgender identity who -- as a child, and**

11 **then once they are an adolescent have a**

12 **cisgender identity?**

13 ATTORNEY SMITH: Object to form.

14 A. So the data is really on people who --

15 the data that we have is really on people who

16 have a -- have had a gender identity disorder,

17 a childhood diagnosis, which -- to meet that

18 diagnosis, you don't necessarily need to have a

19 transgender identity.

20 And so we have evidence that there are

21 people -- children who have had a gender

22 identity disorder of childhood who don't have a

23 transgender identity as adolescents and adults.

24 **Q. When you say a gender identity disorder**

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1 **as a child and do not have a transgender**

2 **identity as an adolescent, are you saying those**

3 **as distinct things?**

4 ATTORNEY SMITH: Object to form.

5 A. So the -- when I'm saying gender

6 identity disorder of childhood, I'm referring

7 very specifically to the DSM diagnoses in the

8 DSM -- before DSM-5 -- in DSM-III and IV and

9 the various revisions in between.

10 **Q. Okay. So are you saying that there are**

11 **not patients who have a transgender identity in**

12 **childhood who desist from that in adolescence?**

13 ATTORNEY SMITH: Object to form.

14 A. Well, I'm trying to go -- because I

15 don't take care of children myself, going by --

16 the data and the studies are of people who had

17 a diagnosis of gender-identity disorder of

18 childhood. And that diagnosis did not require

19 a transgender identity to meet the diagnosis.

20 **Q. Let's go back to the Endocrine Society**

21 **Guidelines for a minute.**

22 MR. DAVID: For the record, this is

23 on page 3879 of the document. And this is

24 under -- so we're all on the same page

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1 here -- the recommendations for those

2 involved in the gender-affirming hormone

3 treatment of individuals with GD/gender

4 incongruence, which starts on page 3877 of

5 the document. And then this particular

6 part that I want to talk about is on

7 page 3879.

8 **Q. So, Doctor, you see under evidence,**

9 **there is a statement at the beginning -- I'll**

10 **highlight it -- that in most children diagnosed**

11 **with GD/gender incongruence, it did not persist**

12 **into adolescence.**

13 **Did I read that correctly?**

14 A. Yes.

15 **Q. Okay. And there's also a statement**

16 **that the -- I'll highlight this as well -- the**

17 **large majority, about 85 percent of prepubertal**

18 **children with a childhood diagnosis, did not**

19 **remain GD/gender incongruent in adolescence.**

20 **Did I read that correctly?**

21 A. Yes.

22 **Q. And these guidelines were published in**

23 **2017; is that correct?**

24 A. Yes.

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<p style="text-align: right;">Page 74</p> <p>1 Q. And the DSM-5 was published in 2013, 2 correct? 3 A. Yes. 4 Q. So are you saying these guidelines are 5 based off of the DSM-IV criteria? 6 ATTORNEY SMITH: Object to form. 7 A. The research to make that statement -- 8 in most children diagnosed with GD/gender 9 incongruence, it did not persist into 10 adolescence, the guidelines used GD/gender 11 incongruence as a term. But that's not what -- 12 the research did not use a gender dysphoria 13 diagnosis. 14 Gender dysphoria did not exist as a 15 diagnosis until 2013. And these studies go 16 back from the 1970s to people who were treated 17 in the studies at least several years before 18 publication of any of these articles because 19 they're longitudinal studies. 20 So the DSM-5 didn't exist. So they 21 used the version of DSM that they had when they 22 did the study -- when they started the study. 23 And when you look at the studies, you can see 24 that people had either a diagnosis of gender</p>	<p style="text-align: right;">Page 76</p> <p>1 Q. What is it that you believe is such a 2 significant difference between DSM-IV and 3 gender identity disorder in children and DSM-5 4 gender dysphoria in children? What is the 5 difference that's so significant? 6 ATTORNEY SMITH: Object to form. 7 A. So the significance is that A1 8 criterion in the diagnosis that was not 9 required in earlier versions which is of a 10 transgender identity or kind of a childhood 11 equivalence of a transgender identity by 12 meeting the A1 criterion. 13 And it was specifically added in the 14 discussions of the transition from GID of 15 childhood to gender dysphoria in childhood 16 because there was a recognition in these 17 studies that the GID of childhood diagnosis was 18 too broad because it did not require this 19 identity piece. 20 Q. So if you'll flip back to page 2 of 21 your expert rebuttal report. And in 22 paragraph seven, in the middle there, you're 23 talking about gender dysphoria in children, the 24 diagnosis from DSM-5. And you say the</p>
<p style="text-align: right;">Page 75</p> <p>1 identity disorder of childhood, or -- in many 2 of these studies, it lists that a fraction of 3 the children brought into the study did not 4 even meet criteria of GID in childhood. 5 And then when you look at this large 6 majority desisting, it's of people who had a 7 childhood diagnosis. But it wasn't a childhood 8 diagnosis of either gender dysphoria or gender 9 incongruence, neither of which existed as 10 diagnoses at the time that they were brought 11 into the study. 12 Q. Gender incongruence did not exist as a 13 diagnosis in 2017, either, did it? 14 ATTORNEY SMITH: Object to form. 15 A. Gender incongruence had started being 16 used by 2017 because it was already proposed as 17 an ICD-11 diagnosis by 2012. And so the -- 18 particularly the Europeans who were -- and 19 those kind of behind the World Health 20 Organization and ICD-11 had started using 21 gender incongruence as to term by then. But it 22 was not a DSM diagnosis for which the children 23 were -- you know, screened to being in these 24 longitudinal studies.</p>	<p style="text-align: right;">Page 77</p> <p>1 diagnosis also requires the presence of 2 criterion A1, which is, quote, a strong desire 3 to be of the other gender or insistence that 4 one is the other gender or some alternative 5 gender different from one's assigned gender, 6 end quote. 7 Did I read that correctly? 8 A. Yes. 9 Q. Is that what you are referring to as 10 the A1 criterion that was not required for the 11 DSM-IV diagnosis? 12 ATTORNEY SMITH: Object to form. 13 Q. I'm sorry, Doctor. I didn't hear you. 14 A. Yes. 15 Q. Thank you. 16 Do you happen to have the DSM-IV? 17 ATTORNEY SMITH: Object to form. 18 A. I have one. I don't have it in front 19 of me. 20 Q. Okay. I could not find it online. So 21 I literally have a book (indicating). 22 A. Yes. Go on. 23 Q. So I will make copies of pages for 24 everyone and make -- I apologize. I literally</p>

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1 just have an actual book of the DSM-IV.
 2 Doctor, I'm going to read from page 532 under
 3 gender identity disorder.
 4 ATTORNEY SMITH: Caleb, I'm sorry to
 5 interrupt you. Because Dr. Karasic
 6 doesn't have a copy of the DSM-IV in front
 7 of him, and because you're reading
 8 excerpts from what is the DSM-IV -- why
 9 don't we try this. Dr. Karasic, I heard
 10 you say -- but if you do not have this
 11 with you, it's okay. Do you have the
 12 DSM-IV?
 13 THE WITNESS: I should have it in my
 14 library. But I'm not kind of confident
 15 about getting up and leaving you all and
 16 finding it. Because I don't use -- I
 17 use -- the DSM-5 I have within reach. But
 18 I haven't used the DSM-IV in quite some
 19 time.
 20 ATTORNEY SMITH: Completely
 21 understand.
 22 Caleb, can we go off the record?
 23 MR. DAVID: Sure.
 24 VIDEOGRAPHER: Going off the record

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1 at 1410.
 2 (Break in proceedings.)
 3 VIDEOGRAPHER: Back on the record at
 4 1421.
 5 BY MR. DAVID:
 6 Q. Doctor, before we went off the record,
 7 we were talking about the differences between
 8 the DSM-IV and DSM-5 diagnosis. And I have --
 9 and I'm about to share my screen. I have made
 10 a copy of the DSM-IV, the front cover of the
 11 book, and then the section on gender identity
 12 disorders, including gender identity disorder.
 13 MR. DAVID: And that for the record
 14 is pages 532 to 538 of my copy of the
 15 DSM-IV. We'll mark that as Exhibit 4 to
 16 your deposition.
 17 THE COURT REPORTER: I'm sorry. I
 18 think that will be five. Right?
 19 MR. DAVID: Oh, I'm sorry.
 20 Exhibit 5. I'm getting confused between
 21 the DSM numbers and exhibit numbers.
 22 (Exhibit 5 was marked.)
 23 Q. So looking at what has been marked as
 24 Exhibit 5 to your deposition -- this is under

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1 gender identity disorder, diagnostic features.
 2 I will read this first sentence. And then
 3 we'll have to finagle a little bit so we can
 4 read the second sentence in total. But the
 5 first sentence says, There are two components
 6 of gender identity disorder, both of which must
 7 be present to make the diagnosis.
 8 First, did I read that correctly?
 9 A. Yes.
 10 Q. Okay. Let's see if I can -- okay.
 11 There must be evidence of a strong and
 12 persistent cross-gender identification which is
 13 the desire to be, or the insistence that one
 14 is, of the other sex, criterion A.
 15 Did I read that correctly?
 16 A. Yes.
 17 Q. Is that different than criterion A1
 18 that's contained in the DSM-5?
 19 ATTORNEY SMITH: Object to form.
 20 A. Yes. Yes. It is different.
 21 Q. Can you explain why that's different or
 22 how it's different?
 23 ATTORNEY SMITH: Object to form.
 24 Dr. Karasic, I'm sorry. Can you just

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1 pause for a second? That way I can make
 2 sure I lodge my objections.
 3 THE WITNESS: Sorry.
 4 ATTORNEY SMITH: No problem.
 5 So object to form.
 6 A. So it says there must be evidence of.
 7 Not that there must be. And so when you
 8 look -- if you go down to the criteria, you can
 9 see that the evidence is for criterion of
 10 cross-sex behavior, in addition to the one of
 11 identity. And so you see that A criterion.
 12 And you see the four -- I mean, the five of the
 13 following. But they only require four of the
 14 five.
 15 And so the change that happened with
 16 DSM-5 -- and it was in recognition that in
 17 these studies they were bringing in a lot of
 18 children who did not have transgender identity.
 19 So for gender dysphoria, in DSM-5, they started
 20 requiring this A1 criterion of a desire or
 21 insistence that one is the other sex, as
 22 opposed to just the behavior.
 23 And so when you look at the studies,
 24 this comes out of research that happened -- the

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1 Feminine Boy Study at UCLA which was back in
2 the 1970s, early '80s -- the studies from
3 Dr. Zuker's center in Toronto, and the studies
4 in Amsterdam. Those were the places where they
5 did these longitudinal studies.

6 And in the first study that may well be
7 much of this 85 percent, Dr. Richard Green at
8 UCLA -- I was actually at UCLA training in
9 residency at the time. The people accepted
10 into that study -- it actually preceded this
11 diagnosis. And so they were brought in because
12 their parents were bothered by the femininity in
13 their boys. And they followed these feminine
14 boys for a long period of time -- until they
15 became adults. And pretty much all of them
16 were cisgender, and most of them were gay or
17 bisexual men.

18 The study originated as a longitudinal
19 study of the development of transsexuality.
20 But the book on the study ended up being
21 titled, The Sissy Boy Syndrome and the
22 Development of Homosexuality. Because they had
23 realized they had actually selected feminine
24 boys who would be cisgender -- primarily

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1 cisgender, primarily gay or bisexual once they
2 had those identities as adults.

3 You look at the other studies -- and by
4 that time -- kind of on the basis of Richard
5 Green's work, there were these diagnoses in the
6 DSM, but they were all not requiring the
7 identity piece. And there was a recognition
8 that that was a problem, so it was changed for
9 DSM-5.

10 **Q. Okay. So what I have up on the screen**
11 **now, which is page 537 of Exhibit 5, there's**
12 **the diagnostic criteria for gender identity**
13 **disorder. And criterion A1 in this version**
14 **says, Repeatedly stated desire to be or**
15 **insistence that he or she is the other sex.**

16 **First, did I read that correctly?**

17 A. Yes.

18 **Q. Okay. And in the DSM-5, that is**
19 **updated; it's not using the word sex, it's**
20 **using the word gender and is also acknowledging**
21 **that there are individuals who were nonbinary,**
22 **correct?**

23 ATTORNEY SMITH: Object to form.

24 A. Correct.

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1 **Q. And the other difference between the**
2 **DSM-IV and the DSM-5 is that in the DSM-5, that**
3 **A1 criterion has to exist for the diagnosis; is**
4 **that correct?**

5 ATTORNEY SMITH: Object to form.

6 A. Yes.

7 **Q. Okay. So if I'm understanding you**
8 **correctly, in studies that existed prior to**
9 **2013 or were studying individuals who were**
10 **diagnosed prior to 2013, those individuals**
11 **could have had criteria A2, 3, 4 and 5, and**
12 **received a diagnosis of gender identity**
13 **disorder without the desire or insistence that**
14 **they are of the other gender?**

15 ATTORNEY SMITH: Object to form.

16 A. Yes, that's correct.

17 **Q. Okay. And so if I'm understanding**
18 **correctly, those individuals who were diagnosed**
19 **under the DSM-IV with criteria A2 through 5**
20 **could have been exhibiting behaviors that were**
21 **perceived to be cross-sex, but they themselves**
22 **did not have a transgender identity?**

23 ATTORNEY SMITH: Object to form.

24 A. That is correct.

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1 **Q. Do you believe that that group of**
2 **individuals who were diagnosed under DSM-IV,**
3 **gender identity disorder, with criteria A2**
4 **through 5 account for the 85 percent desistence**
5 **rate that was noted in the Endocrine Society**
6 **Guidelines?**

7 ATTORNEY SMITH: Object to form.

8 A. So I would note that the -- not the
9 existence of the desistence, but that the
10 percentages have changed with time. And so the
11 only subjects of these studies that I have
12 interviewed myself were from the UCLA Feminine
13 Boy Study, and -- which really kind of
14 established a lot of these conceptions.

15 And both of the subjects in that study
16 that I interviewed had strong feminine
17 behaviors that in the early -- late 1960s,
18 early 1970s were of concern to their parents,
19 but did not have transgender identity. And
20 both of them as adults identified as gay men.
21 But they did not identify as transgender, you
22 know, at any point in between.

23 And so the 85 percent -- I'm not

24 asserting that there's no desistence between

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1 puberty -- between -- before puberty --
 2 prepubertal children and adolescents -- puberty
 3 adolescents, that no desistence happens during
 4 that time. But I believe that the 85 percent
 5 is a quite high percentage. And I think it's
 6 weighed on these older studies where --
 7 especially feminine behavior in boys was highly
 8 frowned upon. And parents would take their
 9 kids -- it wasn't just that it was frowned upon
 10 for gender identity, but also homosexuality --
 11 potential homosexuality. And concerned parents
 12 would take their child to the doctor because
 13 they didn't behave in the way that their male
 14 peers behaved.

15 **Q. I'll go ahead and stop sharing right**
 16 **now.**

17 **Do you discount studies that were done**
 18 **on children in adolescence prior to 2013**
 19 **because of the difference in the diagnostic**
 20 **criteria?**

21 ATTORNEY SMITH: Object to form.

22 A. So I would say when I have reviewed the
 23 particular studies, that they did use earlier
 24 criteria. And often there's a notation that a

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1 mention that not everyone in the study met the
 2 criteria -- the DSM-5 criteria.

3 The other thing is, you can look in
 4 studies -- particularly this was noted in the
 5 Dutch studies -- that there were differences in
 6 the gender nonconforming youth, and that those
 7 youth with stronger symptoms of GID of
 8 childhood were more likely to persist than
 9 those with weaker symptoms.

10 So I think that we are looking even --
 11 you know, whether or not it's people -- we
 12 don't know if they met the DSM-5 criteria
 13 because those weren't around. But we know that
 14 there's a diverse population basically in terms
 15 of the symptoms that they have and the
 16 intensity of those symptoms. And not all of
 17 that was measured in those studies.

18 MR. DAVID: Let's go off the record
 19 for just a second.

20 VIDEOGRAPHER: Going off the record
 21 at 1438.

22 (Pause in proceedings.)

23 VIDEOGRAPHER: We're back on at 1439.

24 MR. DAVID: Martha and Jim, until we

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1 significant share of the children in my study
 2 did not even meet criteria for GID of
 3 childhood, but we're still in the study.

4 So they were following nonconforming
 5 youth in a longitudinal way. And they were
 6 youth that had been brought into their
 7 clinic -- into their clinic or research center.

8 And so -- I think when you use -- like
 9 if you use an 85 percent number -- I don't
 10 think the number is that high. And so that's
 11 my assertion.

12 (Pause in proceedings.)

13 BY MR. DAVID:

14 **Q. Okay. So putting aside the 85 percent**
 15 **rate that you say -- that you believe is too**
 16 **high, are there other aspects of studies that**
 17 **use the DSM-IV diagnosis of gender identity**
 18 **disorder that would lead you to discount those**
 19 **when applying them to today's cohort of**
 20 **individuals who are being diagnosed under the**
 21 **DSM-5?**

22 ATTORNEY SMITH: Object to form.

23 A. So, you know, there was the other issue
 24 that I referred to that the studies often

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1 say it's no longer confidential, we're
 2 going to mark at this point -- this
 3 portion of the transcript and the video as
 4 confidential pursuant to the protective
 5 order. Is everyone in agreement with
 6 that?

7 ATTORNEY SMITH: Agree. And just to
 8 add on to that, I would like to mark --
 9 provisionally mark the exhibits
 10 confidential too.

11 MR. DAVID: I'm perfectly fine --
 12 especially Exhibit 1 because that does
 13 have the interviews of the plaintiffs in
 14 it.

15 THE COURT REPORTER: Would you like
 16 me to just mark the whole transcript as
 17 confidential? And that way --

18 ATTORNEY SMITH: Yeah.

19 THE COURT REPORTER: Sometimes it
 20 makes it easier for everybody.

21 ATTORNEY SMITH: Yeah. That would
 22 probably be beneficial.

23 THE COURT REPORTER: Okay.

24 MR. DAVID: I'm agreeable to that.

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1 ATTORNEY SMITH: And we'll just
 2 follow up with additional designations
 3 after we receive the transcript.
 4 BY MR. DAVID:
 5 Q. Doctor, do you have Exhibit 1 of your
 6 expert disclosure report in front of you?
 7 A. Yes.
 8 Q. So if you'll turn to page 15. It
 9 begins your interviews of plaintiffs. And
 10 we're going to talk about Christopher Fain and
 11 Shauntae Anderson. We'll start with Mr. Fain
 12 because he is the first one chronologically in
 13 your report.
 14 My understanding from this is that
 15 you -- it's described as an interview. You
 16 conducted an interview of Mr. Fain via Zoom on
 17 December 19th, 2021; is that correct?
 18 A. Yes.
 19 Q. And when you began this interview, what
 20 did you tell Mr. Fain was the purpose of the
 21 interview?
 22 ATTORNEY SMITH: Object to form.
 23 A. So I told him that I was not providing
 24 clinical care, so this was not an evaluation to

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1 send to his providers to support any particular
 2 intervention. But that I was an expert in this
 3 case, and this was an interview to gather
 4 information for my work.
 5 Q. And prior to your interview, had you
 6 reviewed any medical records of Mr. Fain?
 7 A. Yes. I had reviewed the medical
 8 records that were sent by the Lambda Legal
 9 office staff.
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 5 ATTORNEY SMITH: And, Caleb, just
 6 before we proceed, I just want to clarify
 7 that we provided to Dr. Karasic all
 8 medical records produced to defendants
 9 which are all the medical records we
 10 gathered from providers that would be
 11 relevant to this care.
 12 MR. DAVID: Okay. Thank you.
 13 Q. Did you speak with any of Mr. Fain's
 14 providers either before or after your
 15 interview?
 16 ATTORNEY SMITH: Objection to form.
 17 A. No.
 18 Q. Okay. Now, looking at paragraph 50 on
 19 page 15 of Exhibit 1, it says, Mr. Fain states
 20 that he has quote, desperately needed, end
 21 quote, top surgery for many years, but hadn't
 22 been able to get surgery due to an exclusion in
 23 Medicaid coverage. He states he has been
 24 wearing a binder since age 12.

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1 Did I read that correctly?
 2 A. Yes.
 3 Q. Did Mr. Fain express to you that he has
 4 requested from Medicaid that he receive a
 5 surgery?
 6 ATTORNEY SMITH: Object to form.
 7 A. I don't recall where exactly things
 8 stood with the process. I know that he got a
 9 letter for surgery. So he was attempting to
 10 access surgery. But I don't know whether --
 11 you know, what -- all of the kind of
 12 administrative things that happened in that
 13 regard.
 14 Q. You go through Mr. Fain's history,
 15 particularly childhood. And I wanted to ask
 16 you about paragraph 62 on page 17. And the
 17 first sentence says, Mr. Fain started
 18 testosterone March 2019.
 19 Did I read that correctly?
 20 A. Yes. That was from -- when he told me
 21 he started testosterone.
 22 Q. Do you know if Medicaid provided
 23 coverage for his testosterone?
 24 ATTORNEY SMITH: Object to form.

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1	A. I don't recall what he said now in	1	
2	terms of that.	2	
3	Q. And the next paragraph, paragraph 63	3	
4	says, Mr. Fain states being on hormones has	4	
5	been affirming with a reduction in gender	5	
6	dysphoria.	6	ATTORNEY SMITH: Object to form.
7	Did I read that correctly?	7	A. I don't recall what was being covered
8	A. Yes.	8	and what wasn't from our conversation.
9	Q. So he actually expressed to you that	9	
10	the hormone therapy was relieving his symptoms	10	
11	of gender dysphoria?	11	
12	ATTORNEY SMITH: Object to form.	12	
13	A. Yes. It was providing partial relief.	13	
14	Q. Paragraph 64 says, Mr. Fain states he	14	
15	had an evaluation for chest surgery around	15	
16	June 2021, but he can't afford to pay	16	
17	out-of-pocket and insurance won't cover the	17	
18	surgery.	18	
19	Did I read that correctly?	19	
20	A. Yes.	20	
21	Q. Did you have a conversation with	21	
22	Mr. Fain about application to Medicaid for	22	
23	coverage for the surgery?	23	
24	ATTORNEY SMITH: Object to form.	24	

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1	A. I don't recall how much conversation we	1	
2	had procedurally of the steps he had taken to	2	
3	try to get Medicaid to pay for the surgery.	3	
4		4	
5		5	
6		6	
7		7	
8		8	
9	Q. Can I ask you that -- because I get	9	
10	different responses to that depending on who I	10	
11	ask.	11	
12	A. It's actually pronounced differently by	12	
13	different people. So it's fine to say that,	13	
14	yes.	14	
15		15	
16		16	
17		17	
18		18	
19		19	
20		20	
21		21	
22		22	
23		23	
24		24	

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1	Q. We talked about this a little bit at	1	
2	the very beginning of your deposition. In your	2	
3	report, you had a -- there's a difference	3	
4	between lower case gender dysphoria and	4	
5	capitalized gender dysphoria. Is capitalized	5	
6	gender dysphoria a mental illness?	6	
7	ATTORNEY SMITH: Object to form.	7	
8	A. So capitalized gender dysphoria is in	8	
9	the list of mental disorders of DSM-5.	9	
10		10	
11		11	
12		12	
13		13	
14		14	
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17		17	
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19		19	
20		20	
21		21	
22		22	
23		23	
24		24	
	Page 99		Page 101
1		1	ATTORNEY SMITH: Object to form.
2		2	A. Yes.
3		3	Q. Are you aware of any physical pain that
4		4	Mr. Fain is experiencing as a result of gender
5		5	dysphoria?
6		6	A. So I don't recall if he describes any
7		7	of the discomfort with his breasts as physical
8		8	pain. But I think -- believe the physical pain
9		9	that I referred to is -- in the report is back
10	at	10	pain. But there are certainly some trans
11		11	people who express or describe the discomfort
12		12	with their breasts as being physically painful.
13		13	Q. And paragraph 72, the first sentence
14	?	14	says, Mr. Fain has a good understanding of the
15		15	risks and benefits of surgery and capacity for
16		16	informed consent.
17		17	Did I read that sentence correctly?
18		18	A. Yes.
19		19	Q. Did you ask him what the risks and
20		20	benefits of surgery are?
21		21	ATTORNEY SMITH: Object to form.
22		22	A. Yes.
23		23	Q. And he was able to respond to you and
24		24	explain what those risks and benefits of

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1 surgery were?
 2 ATTORNEY SMITH: Object to form.
 3 A. Yes. Sufficiently that I felt he had
 4 the capacity to give informed consent.
 5 **Q. This may be self-explanatory from your**
 6 **reports. But generally when you're talking**
 7 **about informed consent -- we hear everyone say**
 8 **that you have to discuss the risks, benefits**
 9 **and alternatives.**
 10 A. Yes.
 11 **Q. Are there alternatives in this**
 12 **situation?**
 13 ATTORNEY SMITH: Object to form.
 14 A. So I am pretty confident that there is
 15 not an alternative treatment in this situation.
 16 Because Mr. Fain has had discomfort with his
 17 breasts for a long time. And, you know, any
 18 kind of -- there's no treatment that has helped
 19 for that. So I don't think that there's an
 20 alternative that will make him comfortable with
 21 having breasts.
 22 **Q. For patients other than Mr. Fain --**
 23 **just a general patient, can there be**
 24 **alternatives to surgical therapy?**

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1 ATTORNEY SMITH: Object to form.
 2 A. So it really does depend on the patient
 3 and intensity and persistence of the gender
 4 dysphoria. And so there might be -- but
 5 there's not a specific treatment for the people
 6 for whom surgery is indicated. People who have
 7 this persistent -- let's say somebody who has
 8 persistent gender dysphoria about having
 9 their -- having breasts. You know, by the time
 10 the recommendation has been made, they've
 11 already tried binding typically, and binding
 12 hasn't worked sufficiently for their dysphoria.
 13 In other words, there have been things
 14 that they have used to cope with having breasts
 15 during this time period before -- between, you
 16 know, onset of gender dysphoria and when they
 17 have surgery. Those approaches have not
 18 addressed the gender dysphoria.
 19 **Q. Again, if I'm understanding correctly,**
 20 **if a patient is at the point where you believe**
 21 **that surgical treatment is recommended, then by**
 22 **definition that patient has already gone**
 23 **through the alternatives?**
 24 ATTORNEY SMITH: Object to form.

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1 A. Yes. I think by definition they have
 2 already had an extended period of time of
 3 living with the dysphoria and trying to cope
 4 with it or minimize it in whatever ways they
 5 can. And the gender dysphoria has persisted to
 6 where they say I need surgery.
 7 **Q. I have seen -- and I don't know**
 8 **where -- but in some of the guidelines.**
 9 **There's a lot of literature that's been thrown**
 10 **around in this case. But some of the**
 11 **guidelines have recommendations such as a**
 12 **person has to live with a transgender identity**
 13 **for six months before medical or surgical**
 14 **treatment can be considered, things like that.**
 15 **Is there a time period that you expect**
 16 **a patient to be living with a transgender**
 17 **identity prior to initiating those types of**
 18 **medical or surgical therapies?**
 19 ATTORNEY SMITH: Object to form.
 20 A. From Standards of Care 7, there are
 21 specific requirements for gender -- for genital
 22 surgery. And that is one year on cross-sex
 23 hormones unless there is some contraindication
 24 to that.

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1 For breast surgery for trans men, there
 2 is not a hormone requirement. But just the
 3 diagnosis -- getting a diagnosis of gender
 4 dysphoria includes having those symptoms for at
 5 least six months. So it isn't that somebody
 6 would say, you know, over the weekend I
 7 realized I needed chest surgery.
 8 **Q. Okay. So -- and maybe that is where I**
 9 **saw it. Is it in the DSM-5 that there's a**
 10 **requirement to meet the diagnostic criteria**
 11 **that they have to have been experiencing this**
 12 **for at least six months? Is that where that**
 13 **is?**
 14 A. Yes.
 15 ATTORNEY SMITH: Object to form.
 16 **Q. And is that six-month time frame**
 17 **adopted by WPATH?**
 18 ATTORNEY SMITH: Object to form.
 19 A. So WPATH in Standards of Care 7 did not
 20 make reference to the DSM because the DSM was
 21 in the middle of transition between versions,
 22 between DSM-IV and DSM-5. So the DSM-5 ended
 23 up coming out in 2013. Standards of Care 7 was
 24 announced in 2011, and then published in 2012.

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1 And so there was this overlap when Standards of
2 Care 7 was being written that we didn't know
3 the criteria. And so there's not a requirement
4 for a gender dysphoria diagnosis for that
5 reason.

6 **Q. Okay.**

7 A. The diagnosis didn't exist yet. And we
8 knew that the GID DSM-IV criteria were going to
9 change, so it didn't make sense to reference
10 those.

11 **Q. Because the diagnosis did not exist at
12 the time that the Standards of Care 7 were
13 adopted by WPATH or were published by WPATH,
14 was there some sort of an update to Standards
15 of Care 7 after the DSM-5 was published in
16 2013?**

17 ATTORNEY SMITH: Object to form.

18 A. So there wasn't -- there has not been
19 an update -- and there's not an update until
20 Standards of Care 8. But the criteria were
21 written I think that -- you know, it's
22 certainly easy to apply it to the gender
23 dysphoria diagnosis. And even though the
24 diagnoses hadn't been published, we were aware

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1 because WPATH was in communication with the
2 APA. I'm involved with the APA as well. We
3 were aware of, you know, the process of this
4 going on and that, you know, there would be a
5 diagnosis and -- but that's why we didn't refer
6 to a specific diagnosis or diagnostic criteria.

7 In practicality, for insurance
8 coverage, you need to have the DSM-5 diagnosis
9 of gender dysphoria. So even though it's not
10 listed as a WPATH criteria within the United
11 States at least, people need to have that
12 gender dysphoria diagnosis, you know, for
13 things like insurance reimbursement or even
14 in -- you know, for the doctor to put down for
15 reimbursement for routine medical visits.

16 **Q. In WPATH Standards of Care 8, at least
17 the draft version that I have seen, there is
18 some discussion about the new -- I don't know
19 that it's new anymore. But the ICD-11 code for
20 gender incongruence (phonetic) or
21 incongruence -- I say it incorrectly, I think.
22 But are you familiar with the ICD-11 code for
23 gender incongruence?**

24 ATTORNEY SMITH: Object to form.

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1 A. Yes. I'm familiar with the process to
2 get to gender incongruence by the World Health
3 Organization for ICD. But the United States,
4 in terms of ICD adoption, is way behind the
5 rest of the world. So we only -- we were using
6 ICD-9 which was adopted by -- you know, was
7 created around 1975, up until just a few years
8 ago. And then we moved to ICD-10 while they
9 were already working on its replacement.

10 So just our CMS - Center for Medicare
11 and Medicaid Services - it is just very slow in
12 new adoption of -- and so they have their own
13 ICD CM, which is the American -- it's the
14 ICD-10-CM, which is the American version of the
15 ICD that's in use here. I don't know whether
16 I'll still be in practice when ICD-11 is
17 adopted -- or alive, when the ICD-11 is adopted
18 in the United States.

19 **Q. Okay. So it sounds like it might not
20 matter for practical purposes in the United
21 States anytime soon. But under ICD-11, for
22 gender incongruence -- if I'm understanding
23 that diagnostic code correctly, there is no
24 requirement of clinically significant distress**

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1 **to be diagnosed with gender incongruence; is
2 that right?**

3 ATTORNEY SMITH: Object to form.

4 A. That's correct.

5 **Q. Do you recommend medical or surgical
6 therapy for individuals who have been diagnosed
7 with gender incongruence, but not gender
8 dysphoria?**

9 ATTORNEY SMITH: Object to form.

10 A. So gender incongruence is not in use in
11 the United States. So I don't have any
12 patients diagnosed. I suppose if somebody came
13 from the Netherlands and had a gender
14 incongruence diagnosis, then it might be
15 appropriate. But that situation has not
16 occurred yet.

17 **Q. Let me see if I can find where in your
18 report that the -- if you can, flip back to
19 page 6 of your original report. Paragraph 23
20 has the diagnostic criteria under the DSM-5.
21 And if I'm understanding this correctly, the A1
22 criterion, which is required under DSM-5 for a
23 diagnosis of gender dysphoria, it says, A
24 marked incongruence between one's**

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<p style="text-align: right;">Page 110</p> <p>1 experience/expressed gender and primary or 2 secondary sex characteristics; is that correct? 3 A. Yes. 4 Q. Okay. Is it your understanding that 5 the ICD-11 gender incongruence diagnosis is 6 essentially criterion A1 of the gender 7 dysphoria diagnosis? 8 ATTORNEY SMITH: Object to form. 9 A. My recollection -- remember, I don't 10 use gender incongruence from ICD-11. But that 11 A1 -- it includes the A1 criterion, and I 12 believe a six-month duration criterion as well. 13 But it's only something that I've looked at 14 when there's been discussions or debates in 15 terms of proceeding towards ICD-11. 16 Q. And following the diagnostic criteria 17 which requires -- for DSM-5, which requires at 18 least two from Section A -- one of them has to 19 be A1. And then if you flip the page, you have 20 criterion B, which is, the condition is 21 associated with clinically significant distress 22 or impairment, social, occupational or other 23 important areas of functioning. 24 So first, did I read criterion B</p>	<p style="text-align: right;">Page 112</p> <p>1 he meets DSM-5 criteria for gender dysphoria. 2 A. I'm sorry. Can you tell me where that 3 is again? 4 Q. I'm sorry. Page 18 of the initial 5 report. 6 A. Page 18 of the initial report. And 7 what number? 8 Q. Seventy-three. 9 A. Seventy-three is on page 19. 10 Q. Well, that's interesting. 11 A. Maybe that's just how it printed out 12 when I printed out my copy. 13 Q. I'm sorry? 14 A. We probably used different fonts, and 15 so -- 16 Q. Okay. So does paragraph 73 still start 17 with Mr. Fain is a 46-year-old man? 18 A. Yeah. I'm sure the content is the 19 same, but the page number could be different. 20 I probably printed a different font is my 21 guess. 22 So, yes, 73 starts with Mr. Fain is a 23 46-year-old man. 24 Q. Perfect. I'll go ahead and read that.</p>
<p style="text-align: right;">Page 111</p> <p>1 correctly? 2 A. Yes. 3 Q. When you are treating patients with 4 gender dysphoria, you would not recommend to 5 them any medical or surgical therapy without 6 criterion B, correct? 7 ATTORNEY SMITH: Object to form. 8 A. Well, again, it's not usually my 9 recommendation. It's generally that people 10 wanting surgery -- that it is coming from them 11 that they are -- that they have a desire for 12 surgery, and they don't feel that there's 13 anything else that can help their gender 14 dysphoria. 15 So with that caveat, I would -- for me 16 to make a gender dysphoria diagnosis, which I 17 do when -- if I write a letter, let's say for 18 somebody seeking surgery, they need to meet 19 that criterion as part of the criteria for 20 meeting gender dysphoria. 21 Q. I want to flip back to page 18. In 22 paragraph 73, it says, Mr. Fain is a 23 46-year-old man with a diagnosis of gender 24 dysphoria. It is my professional opinion that</p>	<p style="text-align: right;">Page 113</p> <p>1 Mr. Fain is a 46-year-old man with a 2 diagnosis of gender dysphoria. It is my 3 professional opinion that he meets DSM-5 4 criteria for gender dysphoria. He also meets 5 WPATH Standards of Care 7 criteria for chest 6 surgery. Chest surgery is medically-necessary 7 treatment for his gender dysphoria. 8 First, did I read that correctly? 9 A. Yes. 10 Q. Second, you made a diagnosis on 11 December 19th of 2021; is that correct? 12 ATTORNEY SMITH: Object to form. 13 A. Well, I'll also note that he already 14 had a diagnosis made by his psychologist who 15 had written a letter previously. So I 16 wasn't -- and he had a diagnosis from I think 17 medical providers as well. 18 So there's both -- my opinion that he 19 has that diagnosis, plus there is the fact that 20 he has had this diagnosis -- he's carried this 21 diagnosis made by other providers. 22 Q. And I think that you're understanding 23 where I'm going with this. Are you able to 24 make a diagnosis of a patient based off of one</p>

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1 telehealth visit? I know that's not what this
2 was. But essentially from one remote
3 interview, are you able to make a diagnosis?

4 ATTORNEY SMITH: Object to form.

5 A. First of all, on the remote versus not
6 remote -- certainly we've learned we can do
7 depositions remotely. Starting in March of
8 2020, we found that we could do these -- we can
9 provide mental health care remotely as well.

10 So essentially none of my work before
11 March of 2020 was remote. And 100 percent of
12 it has been -- for all of my clinical work has
13 been remote since March of 2020. And we
14 found -- and I think colleagues have found this
15 as well -- it works pretty well. And, you
16 know, many of us are considering, if the
17 pandemic ever ends, just continuing remotely
18 because we're quite able to do our work
19 remotely with the technological tools that have
20 been developed. So that was part one.

21 I did spend two hours with each of the
22 plaintiffs. And there are circumstances in
23 which people might need longer. But I did not
24 think that that was the case with either of the

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1 plaintiffs, that each of them had had
2 well-documented gender dysphoria from other
3 providers. They had been living in the gender
4 that was congruent to them and they were on
5 hormones already.

6 And in each case, the evaluation was
7 whether a particular surgery or surgeries might
8 be a necessary next step. And I believe that
9 work can be done for many people in a two-hour
10 telehealth visit.

11 ATTORNEY SMITH: Caleb, before we
12 proceed -- we've been going for some time
13 now. And I'm pretty sure that Dr. Karasic
14 might be hitting lunch soon. Would it be
15 okay to take a break?

16 MR. DAVID: Sure. Absolutely. How
17 long would you guys like to take?

18 ATTORNEY SMITH: Let's go for at
19 least 15 minutes.

20 MR. DAVID: Absolutely.

21 THE WITNESS: Since I have to prepare
22 something for lunch, why don't we do --
23 let's do 20.

24 ATTORNEY SMITH: Okay.

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1 MR. DAVID: Twenty sounds good.

2 VIDEOGRAPHER: We are going off the
3 record at 1521.

4 (Break in proceedings.)

5 VIDEOGRAPHER: We are back on the
6 record at 1544.

7 BY MR. DAVID:

8 Q. Doctor, before we took a break, we were
9 discussing Mr. Fain and your ultimate opinions
10 regarding his medical necessity of treatment
11 for his gender dysphoria. And we were looking
12 at the paragraph 73 of Exhibit 1, which is your
13 original expert disclosure report.

14 I believe that you said that you
15 were -- the first sentence where you say that
16 he's a 46-year-old man with a diagnosis of
17 gender dysphoria was partially based on the
18 fact that Mr. Fain had a prior diagnosis of
19 gender dysphoria from his treating physician;
20 is that correct?

21 ATTORNEY SMITH: Object to form.

22 A. Yes, from -- also from his
23 psychologist.

24 Q. And you also found that he meets the

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1 DSM-5 criteria for gender dysphoria, and that
2 was a determination that was made by you from
3 your interview; is that right?

4 ATTORNEY SMITH: Object to form.

5 A. That's correct.

6 Q. Okay. And you state he also meets
7 WPATH Standards of Care 7 criteria for chest
8 surgery; is that correct?

9 A. That's correct.

10 Q. Without prolonging this and going into
11 each individual bullet point, can you give an
12 overview of what the Standards of Care 7
13 criteria are for chest surgery?

14 ATTORNEY SMITH: Object to form.

15 A. Sure. So it's that the person has a
16 persistent gender dysphoria that would benefit
17 from that particular treatment, that they --
18 for the criteria for adults, at age majority,
19 they can understand the risks and benefits of
20 care. And if there's not a -- if there's not a
21 mental illness that would interfere with
22 ability to give informed consent or participate
23 in care which is described as mental health
24 being well controlled.

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1 A. Yes.
2 **Q. And why specifically is chest surgery**
3 **as opposed to any other surgery a**
4 **medically-necessary treatment for Mr. Fain's**
5 **gender dysphoria?**
6 ATTORNEY SMITH: Object to form.
7 A. So I'm not excluding that he could at
8 some point present to a provider with other
9 symptoms of gender dysphoria that needed to be
10 treated. But it's very clear that Mr. Fain has
11 had longstanding gender dysphoria that relates
12 to the presence of breasts, that this has
13 caused clinically significant distress. This
14 impairs with other aspects of his life. And so
15 I think from my interview it was pretty clear
16 that there is this longstanding impairing
17 distress related to the breasts.
18 **Q. And based on your interview and your**
19 **review of Mr. Fain's medical records, are there**
20 **any other aspects of his body other than his**
21 **breasts that are causing him clinically**
22 **significant distress?**
23 ATTORNEY SMITH: Object to form.
24 A. So I recall that he did briefly talk

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8 **Q. Okay. And then the last sentence of**
9 **paragraph 73 is chest surgery is**
10 **medically-necessary treatment for his gender**
11 **dysphoria.**
12 **Did I read that correctly?**
13 A. That is correct.
14 **Q. What does it mean that it is**
15 **medically-necessary treatment?**
16 ATTORNEY SMITH: Object to form.
17 A. So medically-necessary treatment is
18 treatment that a healthcare provider would
19 recommend in accordance with generally-accepted
20 medical practice or guidelines.
21 **Q. In the case of Mr. Fain, chest surgery**
22 **is a treatment that you would recommend in**
23 **accordance with generally-accepted guidelines?**
24 ATTORNEY SMITH: Object to form.

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1 about other aspects of his body that he had
2 distress over, but the real focus was his
3 breasts. So I wouldn't say -- as I had said
4 previously, I wouldn't exclude that at some
5 time that he might, you know, have some other
6 distress. Certainly, he has had distress that
7 being on testosterone has helped with. At this
8 point when interviewed, the focus of his
9 distress was his breasts.
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13 ATTORNEY SMITH: Object to form.
14 A. What I would expect is that he would
15 have quite significant relief from the
16 dysphoria from his chest. That appears to be,
17 you know, true for the overwhelming number of
18 trans men who have chest surgery.
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22 **Q. So we talked a little bit earlier about**
23 **the presentation of the distress. And you said**
24 **for some people they actually do describe it as**

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1 **experiencing physical pain. So what I'm asking**
2 **about Mr. Fain's presentation of distress is,**
3 **did he describe -- does he experience physical**
4 **pain? Is it a depressive effect? What is it**
5 **that he is experiencing?**
6 **ATTORNEY SMITH: Object to form;**
7 **asked and answered.**
8 **A. So he said that he experiences from**
9 **just the sensation of having breasts discomfort**
10 **that is so intense that he's at times**
11 **dissociated or even fallen down. So he does**
12 **experience, you know, kind of physical as well**
13 **as psychological sensations that are very**
14 **uncomfortable that he relates to his breasts.**
15 **Q. Can you explain what dissociation is?**
16 **ATTORNEY SMITH: Object to form.**
17 **A. So that is when their -- particularly**
18 **in this case, the dissociation is a separation**
19 **essentially of mind from body where people are**
20 **attempting to escape pain by trying to kind of**
21 **separate themselves from the sensations of**
22 **their body. And I believe that's what Mr. Fain**
23 **was referring to.**
24 **Q. Have there been studies that you're**

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1 **aware of that examined or evaluated whether**
2 **individual patients experienced relief of**
3 **dissociation following gender-affirming**
4 **surgeries?**
5 **ATTORNEY SMITH: Object to form.**
6 **A. I can't recall a study that attempted**
7 **to use some measurement of dissociation and,**
8 **you know, a change in people who had received**
9 **surgery or not received surgery.**
10 **Q. I'm going to start asking questions**
11 **about Shauntae Anderson --**
12 **A. Okay.**
13 **Q. -- and starting at paragraph 75 of your**
14 **original report that's marked as Exhibit 1. So**
15 **Shauntae Anderson is a 45-year-old transgender**
16 **woman interviewed via Zoom on December 17th,**
17 **2021; is that correct?**
18 **A. Yes.**
19 **Q. And I believe you said earlier, the**
20 **interview with Ms. Anderson was also two hours**
21 **long?**
22 **A. Yes.**
23 **Q. I want to flip to paragraph 81. I will**
24 **read the first sentence. In 2019, she was**

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1 **prescribed feminizing hormones while in federal**
2 **prison and has been on hormones ever since.**
3 **First, did I read that correctly?**
4 **A. Yes.**
5 **Q. Did Ms. Anderson tell you that she is**
6 **on hormones today?**
7 **ATTORNEY SMITH: Object to form.**
8 **Q. As of December 2021?**
9 **ATTORNEY SMITH: Object to form.**
10 **A. Yes. That was -- yes. That was -- my**
11 **recollection is that she had said that she had**
12 **continued on hormones.**
13 **Q. Do you know one way or the other**
14 **whether Medicaid provides coverage for those**
15 **hormones?**
16 **ATTORNEY SMITH: Object to form.**
17 **A. So even though I had looked at some**
18 **Medicare listings of exclusions for hormones,**
19 **my understanding is that she was getting them.**
20 **Q. Paragraph 82 says, Ms. Anderson reports**
21 **great benefits from treatment with hormones.**
22 **She has had softened skin, reduced body hair**
23 **and breast growth. She feels more feminine.**
24 **She states she feels better about herself. She**

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1 experiences less gender dysphoria as she feels
 2 her body is more in line with identity.
 3 **Did I read that correctly?**
 4 A. Yes.
 5 **Q. Is there a point where hormones have**
 6 **essentially reached their maximum medical**
 7 **effect on a patient?**
 8 ATTORNEY SMITH: Object to form.
 9 A. Hormones in a transgender woman prior
 10 to oophorectomy are absolutely needed along
 11 with often androgen-suppressing drugs in order
 12 to prevent a return of masculinization.
 13 Postoperatively, after oophorectomy, often
 14 transgender women need less hormones.
 15 Although, they often stay on them for bone
 16 health, for example, and -- but certainly
 17 while -- before oophorectomy, people do need to
 18 remain on them, or else they will masculinize
 19 again.
 20 **Q. And Ms. Anderson had reported these**
 21 **benefits, softened skin, reduced body hair,**
 22 **breast growth. If she stopped taking the**
 23 **feminizing hormones, would those benefits sort**
 24 **of walk backwards? Would they be reversed over**

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1 time?
 2 ATTORNEY SMITH: Object to form.
 3 A. So there's the degree of breast growth
 4 that would be permanent. But the softened skin
 5 and the reduced body hair, fat distribution as
 6 well, would reverse over time.
 7 **Q. And if Ms. Anderson remains on**
 8 **feminizing hormones for another year, let's**
 9 **say, will that -- will those benefits**
 10 **progressively enhance? Do you understand what**
 11 **I'm asking?**
 12 ATTORNEY SMITH: Object to form.
 13 A. So there can be progressing
 14 feminization with time. But very often people
 15 do reach a -- kind of a limit after 12 to 18
 16 months of being on estradiol and
 17 androgen-suppressing drugs, for example, for
 18 breast growth. You know, the doctors who have
 19 expertise in this can make an assessment of,
 20 you know, where they're going in terms of
 21 continuing breast growth. So there is
 22 continued feminization up to a point. And then
 23 people tend to be more stable.
 24 **Q. Okay. So after 12 to 18 months,**

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1 continuing for another three years isn't going
 2 to increase Ms. Anderson's breast growth?
 3 ATTORNEY SMITH: Object to form.
 4 A. So -- well, people's breast size can
 5 change with weight. And people's weight tends
 6 to increase with age. So it's hard to make a
 7 categorical judgment. But if I'm relying on
 8 the -- you know, people like plastic surgeons
 9 and primary care people, they will say that
 10 breast growth, you know, tends to kind of reach
 11 a limit and slows down in terms of aging.
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 2 **Q. Paragraph 87, I'll go ahead and read**
 3 **it. Ms. Anderson also seeks breast**
 4 **augmentation. She feels that she has had**
 5 **breast growth, but that her breasts don't have**
 6 **a female configuration. She wants surgery to**
 7 **have female-shaped breasts. She states her**
 8 **breasts don't fit in most bras. She doesn't**
 9 **like to look at her breasts in the shower or**
 10 **when her bra is off. She states this affects**
 11 **her mental health and feels distress that her**
 12 **body doesn't reflect her gender.**
 13 **Did I read that correctly?**
 14 A. Yes.
 15 **Q. So in the case of Ms. Anderson, she has**
 16 **had some breast growth, but the growth has not**
 17 **been I guess traditionally female-shaped**
 18 **breasts; is that correct?**
 19 ATTORNEY SMITH: Object to form.
 20 A. Yes. Yes. That's how she describes
 21 it.
 22 **Q. So in the instance of Ms. Anderson --**
 23 **and I believe she is seeking a top surgery,**
 24 **correct?**

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1 ATTORNEY SMITH: Object to form.
 2 A. Yes. She is -- breast augmentation,
 3 yes.
 4 **Q. For her, it's not that she doesn't have**
 5 **breasts and needs -- and would like to have**
 6 **breasts? It's that she has issues and has**
 7 **distress as a result of the shape of her**
 8 **breasts? Am I understanding that correctly?**
 9 ATTORNEY SMITH: Object to form.
 10 A. Yes. This is very common that people
 11 on treatment with estrogen have breast
 12 enlargement, but the -- kind of the shape of
 13 the breasts remain more of the shape of male
 14 breasts. And so, for example, in the program
 15 for gender-affirming care in the Department of
 16 Public Health, they refer to it as feminizing
 17 mammoplasty as opposed to breast augmentation
 18 because it's not just altering the size of the
 19 breast but making them look more female.
 20 **Q. The next paragraph says, At some future**
 21 **time she might pursue body contouring. She**
 22 **states that a more female appearance means more**
 23 **people would perceive her as a female in**
 24 **public. She feels that being perceived as**

1 **feminizing mammoplasty, have there been studies**
 2 **done to analyze or evaluate the long-term**
 3 **effects on depression, anxiety, distress, for**
 4 **feminizing mammoplasty?**
 5 ATTORNEY SMITH: Object to form.
 6 A. So I think that the gender-affirming
 7 surgeries have -- often when these have been
 8 followed longitudinally, people have had
 9 multiple surgeries. I'm trying to think of a
 10 specific study of people who had breast
 11 augmentation, but no other intervention. I
 12 can't name one at this time.
 13 **Q. And same question for body contouring.**
 14 **Are you aware of any studies that analyzed the**
 15 **long-term effects on depression and anxiety,**
 16 **distress for individuals who underwent body**
 17 **contouring?**
 18 ATTORNEY SMITH: Object to form.
 19 A. There have been a couple of
 20 publications on body contouring, but I can't
 21 tell you the details of those studies.
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1 **transgender puts her in danger when out of her**
 2 **home and wants to be able to be perceived as**
 3 **female for her own safety.**
 4 **Did I read that correctly?**
 5 A. Yes.
 6 **Q. Did Ms. Anderson express to you that**
 7 **the body contouring would also be helpful to**
 8 **her internal sense of gender identity or only**
 9 **to the perception of the public?**
 10 ATTORNEY SMITH: Object to form.
 11 A. Both. We didn't spend a lot of time on
 12 body contouring because it wasn't something
 13 that Ms. Anderson was pursuing at this time.
 14 But I asked her -- because we were doing an
 15 assessment for genital surgery and breast
 16 augmentation. And I asked her whether in the
 17 future were there other surgeries that she
 18 might pursue, and she told me body contouring.
 19 And so that's where she expressed that concern,
 20 having a more female-shaped body would feel
 21 safer for her. But she also said that it was
 22 more congruent with her, you know, female
 23 identity.
 24 **Q. I forgot to ask -- in terms of the**

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 13 ATTORNEY SMITH: Object to form.
 14 A. Correct.
 15 **Q. Okay. Paragraph 92, Ms. Anderson**
 16 **states the denial of gender-affirming care**
 17 **makes her feel like less than a person. She**
 18 **states this discrimination makes her feel sad**
 19 **and hopeless. She states that she has a**
 20 **medical issue that needs to be addressed, and I**
 21 **am being treated as less than human for being**
 22 **denied treatment. She feels this continues to**
 23 **impact the quality of her life and subjects her**
 24 **to continuing distress.**

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1 **Did I read that correctly?**
 2 A. Yes.
 3 **Q. Do you know when Ms. Anderson was**
 4 **denied gender-affirming care?**
 5 ATTORNEY SMITH: Object to form.
 6 A. No, I do not.
 7 **Q. Do you know of any particular**
 8 **gender-affirming care that was denied to**
 9 **Ms. Anderson?**
 10 ATTORNEY SMITH: Object to form.
 11 A. She states that she has sought to get
 12 gender-affirming surgery, vaginoplasty and
 13 breast augmentation, and has brought those up
 14 with her healthcare providers and has been told
 15 that they are -- would not be available for her
 16 under Medicaid.
 17 **Q. Are you aware of any -- you mentioned a**
 18 **letter that you saw from Mr. Fain that**
 19 **recommended chest surgery. Are you aware of**
 20 **any letters -- similar letters for**
 21 **Ms. Anderson?**
 22 ATTORNEY SMITH: Object to form.
 23 A. No, not that I recall.
 24 **Q. And finally the last paragraph, 93,**

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1 **Ms. Anderson is a 45-year-old transgender woman**
 2 **with a diagnosis of gender dysphoria given by**
 3 **her healthcare providers. And in my opinion,**
 4 **that diagnosis is correct. She meets the WPATH**
 5 **SOC 7 criteria for surgery with persistent**
 6 **gender dysphoria with capacity to consent and**
 7 **is stable psychiatrically. Vaginoplasty and**
 8 **breast augmentation are necessary treatments**
 9 **for her gender dysphoria.**
 10 **Did I read that correctly?**
 11 A. Yes.
 12 **Q. So in the case of Ms. Anderson, she is**
 13 **experiencing distress both from her chest and**
 14 **from her genitalia, correct?**
 15 ATTORNEY SMITH: Object to form.
 16 A. Yes.
 17 **Q. And in Mr. Fain's case, he was only**
 18 **experiencing distress from his chest, correct?**
 19 ATTORNEY SMITH: Object to form.
 20 A. I believe he has experienced other
 21 distress, but his chest is the focus of his
 22 distress.
 23 **Q. How are determinations made as to which**
 24 **surgeries are medically necessary?**

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1 ATTORNEY SMITH: Object to form.
 2 A. Are you talking about for both
 3 plaintiffs?
 4 **Q. Yes.**
 5 ATTORNEY SMITH: Object to form.
 6 A. So in each case the -- each plaintiff
 7 has longstanding distress about a physical
 8 aspect of their body, and that has not resolved
 9 over time. And the treatment of chest surgery
 10 for trans men and vaginoplasty and breast
 11 augmentation for trans women are treatments
 12 that bring relief to many people.
 13 **Q. So for any particular patient, how do**
 14 **you determine which specific surgery will**
 15 **relieve distress?**
 16 ATTORNEY SMITH: Object to form.
 17 A. So there's an exploration with the
 18 patient about physical sources of distress. So
 19 if we look -- in the case of Mr. Fain, there's,
 20 you know, clear evidence that he has had
 21 specifically distress with his breasts since
 22 age 12 at least and -- wearing a binder at age
 23 12, and can run a thread of that distress for
 24 the ensuing three decades. So in that case,

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1 you know, it seems clear from a clinical exam.
 2 **Q. Are you aware of any other DSM-5**
 3 **diagnosis that is treated surgically?**
 4 ATTORNEY SMITH: Object to form.
 5 A. I cannot think of another DSM-5
 6 diagnosis that is treated surgically.
 7 **Q. Okay. If you can, flip to your expert**
 8 **rebuttal report which has been marked as**
 9 **Exhibit 2 to your deposition. There are a few**
 10 **things -- and I promise we're not going to go**
 11 **through this paragraph by paragraph. But there**
 12 **are a few things that I wanted to ask you**
 13 **about. And the first is in paragraph 15 of**
 14 **Exhibit 2. Are you there?**
 15 A. Yes. I'm there.
 16 **Q. And I'll go ahead and read it. In an**
 17 **American prospective study of 104 transgender**
 18 **and nonbinary youth, treatment with puberty**
 19 **blockers or hormones was associated with**
 20 **60 percent less moderate to severe depression,**
 21 **and 73 percent less suicidal ideation over 12**
 22 **months compared to youth not treated. And you**
 23 **say Tordoff, et al., 2022.**
 24 **Did I read that correctly?**

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1 A. Yes.

2 **Q. So you're familiar with the Tordoff**

3 **study?**

4 A. Yes.

5 **Q. I'm going to go ahead and pull this up.**

6 MR. DAVID: We'll mark the Tordoff

7 study as Exhibit 6.

8 (Exhibit 6 was marked.)

9 **Q. You see that on my screen now?**

10 A. Yes.

11 **Q. This is titled, Mental Health Outcomes**

12 **in Transgender and Nonbinary Youths Receiving**

13 **Gender-Affirming Care, correct?**

14 A. Yes.

15 **Q. Okay.**

16 ATTORNEY SMITH: Caleb, not to

17 interrupt you. But if you could make it a

18 little bit larger? It's a little bit hard

19 to see it on at least my screen.

20 MR. DAVID: Absolutely. Is that

21 better?

22 ATTORNEY SMITH: Yes.

23 **Q. I want to direct your attention to -- I**

24 **believe it's Table 3. Yes. Table 3 has --**

1 of the study as opposed to just looking at it

2 immediately, more and more of the people moved

3 from the non-treatment group to the treatment

4 group. And so they had to do a statistical

5 analysis essentially to account for that

6 because people were not in the treated -- or

7 untreated group in a static way. And so the

8 reduction in depression and suicidality is

9 statistically accounting that over time people

10 were moving from the untreated group to the

11 treated group.

12 So that -- you know, every study has,

13 you know, statistical criticism. And that is

14 the criticism of this study, is that it wasn't

15 just two groups of people, one who got

16 treatment over 12 months, and one that didn't

17 get treatment over 12 months. But that the

18 treatment and the non-treatment groups were not

19 static over the 12 months. Because people

20 were -- these were young people who -- some of

21 whom were, you know, needing treatment -- being

22 referred and needing treatment over those

23 12 months, and so joining the other group.

24 **Q. And there was significant dropout**

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1 **it's titled, Temporal Trends in Mental Health**

2 **Outcomes in Multivariable Model 1A, correct?**

3 A. Yes.

4 **Q. I'm sorry. I think I pulled up the**

5 **wrong table. I'm sorry. I'm trying to --**

6 **because they had a table that showed the number**

7 **of individuals. That's the one I was trying to**

8 **find. I don't know why I can't -- I can't find**

9 **what I'm looking for on here. So I just won't**

10 **even ask you about it. I lost the table that I**

11 **was looking for.**

12 A. That can happen with these studies.

13 **Q. Okay. Let me ask, for the Tordoff**

14 **study, as you cite it in your report in**

15 **paragraph 15, have you looked at the raw data**

16 **for the individuals?**

17 ATTORNEY SMITH: Object to form.

18 A. I'm aware of some of the criticism of

19 that, and I'm happy to address that.

20 **Q. Please do.**

21 A. So the study was of people -- of young

22 people who were presenting to this clinic with

23 puberty blockers or -- and receiving puberty

24 blockers or hormones. And over the 12 months

1 **during the course of those 12 months too,**

2 **correct?**

3 ATTORNEY SMITH: Object to form.

4 A. I don't recall the numbers, but I do

5 know that -- I knew many people moved groups

6 over the course of the study. I don't recall

7 how many dropped out of the study completely.

8 **Q. The next paragraph of your rebuttal**

9 **report, paragraph 16, says, In another United**

10 **States study, treatment with gender-affirming**

11 **hormones in transgender youth was associated**

12 **with a substantial reduction in body**

13 **dissatisfaction as well as improvement on**

14 **mental health measures.**

15 **You cite Kuper, et al., 2020, correct?**

16 A. Yes.

17 **Q. Are you able to explain how they**

18 **determined that there was a substantial**

19 **reduction in body dissatisfaction?**

20 ATTORNEY SMITH: Object to form.

21 A. I don't remember the scale that they

22 used for that.

23 **Q. That's more or less my question. Do**

24 **you know how something like body**

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1 dissatisfaction is measured?

2 ATTORNEY SMITH: Object to form.

3 A. Sure. So there are scales, like the
4 body congruent scale. There are a number of
5 scales that have been developed to try to --
6 there's some that are general to body
7 dissatisfaction of all sorts. And there's some
8 that have been tailored to body dissatisfaction
9 related to gender dysphoria.

10 **Q. And is body dissatisfaction
11 interconnected with the distress caused by
12 gender dysphoria?**

13 ATTORNEY SMITH: Object to form.

14 A. So it can be. And so I think the issue
15 is that you can have people who don't have a
16 lot of depression or anxiety to measure, but do
17 have discomfort with their bodies. And an
18 intervention that makes them more comfortable
19 with their bodies can be a therapeutic
20 intervention.

21 **Q. We're going to skip way ahead to
22 paragraph 62. I'll go ahead and read,
23 Dr. Levine claims there's evidence that
24 psychotherapy can sometimes enable a return to**

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1 gender identity that matches sex assigned at
2 birth but offers nothing but anecdotes of
3 reinvestment of one's sex assigned at birth.

4 Then you cite to the Levine report,
5 paragraph 88, quote, I and other clinicians
6 have witnessed reinvestment in the patient's
7 biological sex in some individual patients
8 following a period of time, end quote. Efforts
9 were made in the past to assist patients to
10 come to identify with their sex assigned at
11 birth, but those efforts have proven to be
12 ineffective and harmful and thus treatment with
13 the goal of changing the person's gender
14 identity is no longer considered ethical. It
15 cites to Coleman, et al., 2012 at 16, and
16 American Psychological Association, 2021.

17 Did I read that correctly?

18 A. Yes.

19 **Q. Is there something in Dr. Levine's
20 report that has led you to believe that his
21 clinical practice is focused on trying to
22 dissuade individuals that they do not have a
23 transgender identity?**

24 ATTORNEY SMITH: Object to form.

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1 A. So I can't say I know all aspects of
2 Dr. Levine's clinical practice. There was a
3 time where he was working with transgender
4 people, at least back, you know, 20-plus years
5 ago. I don't know all of the work he does --
6 has done since then. I'm mostly aware of the
7 work he has done with incarcerated trans people
8 and as an expert for various states seeking to
9 not provide transgender care.

10 So I don't know if he -- you know, if
11 he is doing any psychotherapeutic work or how
12 much he does with transgender or cisgender
13 people at this time.

14 **Q. Is paragraph 62 intended to claim that
15 Dr. Levine is engaged in psychotherapy that is
16 focused on essentially conversion of someone
17 back to what -- I guess a cisgender identity or
18 conversion to a cisgender identity?**

19 ATTORNEY SMITH: Object to form.

20 A. Well, it was responding to the sentence
21 about reinvestment in one's sex assigned at
22 birth. I don't know what -- exactly what Dr.
23 Levine means by that. But it sounds like he
24 is, you know, trying to do psychotherapy to

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1 assist somebody in identifying, again, with
2 their sex assigned at birth. And so I can't
3 point to a study about reinvestment because I'm
4 not aware if there's any study or statements of
5 it's efficacy or lack of efficacy. Clearly
6 conversion therapy is something that the field
7 has rejected.

8 **Q. And maybe we're just interpreting this
9 differently. But paragraph 88 from
10 Dr. Levine's report, I interpret that to mean
11 that he has witnessed desistence of patients
12 that have been in his care. Do you interpret
13 that differently?**

14 ATTORNEY SMITH: Object to form.

15 A. I don't think that Dr. Levine does much
16 work with children and that the persistence
17 desistence terminology is primarily one of
18 prepubertal children. So I don't know if
19 that's referring to detransition. I don't
20 know.

21 But typically -- you know, when these
22 terms were coined and where they're usually
23 used in scientific research -- desistence and
24 persistence is with prepubertal children.

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1 Persisting or desisting to get -- later getting
 2 a gender dysphoria diagnosis in adolescents and
 3 adults.
 4 **Q. I apologize. Because I used the**
 5 **incorrect terminology there. What I meant was,**
 6 **he's witnessed a patient detransition. Is**
 7 **detransition something that you have witnessed**
 8 **in adults?**

9 ATTORNEY SMITH: Object to form.

10 A. Well, I would just go back to that
 11 statement, though where he was -- in his
 12 statement he is referring to psychotherapy as
 13 allowing a reinvestment, whatever that means,
 14 in somebody's sex assigned at birth. And so
 15 I'm not sure whether Dr. Levine in this
 16 statement is only referring to the fact there
 17 are some people who would had de-transitioned.

18 **Q. I apologize. Because I don't have**
 19 **Dr. Levine's report pulled up here. But I**
 20 **believe that he quoted from the new -- I don't**
 21 **know if they are the new chairperson or**
 22 **director or something -- president -- something**
 23 **of WPATH -- made comments about WPATH somewhat**
 24 **excluding individuals who dissented from**

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1 **WPATH's majority opinion. Are you familiar**
 2 **with what I'm talking about?**

3 ATTORNEY SMITH: Object to form. And
 4 also if you want to pull up Dr. Levine's
 5 rebuttal report, you can do so, especially
 6 if you're going to refer to it.

7 A. In this case, I'm happy to just refer
 8 generally to -- I believe he is referring to
 9 Laura Edwards-Leeper and Erica Anderson's
 10 comments in the media. And Laura Leeper --

11 ATTORNEY SMITH: Dr. Karasic, we've
 12 lost your sound.

13 THE WITNESS: I'm sorry. Can you
 14 hear me now?

15 ATTORNEY SMITH: Yes.

16 A. So it seems pretty clear to me that, at
 17 least from my perspective, that their views are
 18 not being silenced. You know, Laura
 19 Edwards-Leeper is a member of the SOC 8
 20 committee who helped write the guidelines in
 21 SOC 8 for the treatment of adolescents. I
 22 believe she was on the prepubertal child
 23 chapter as well. So she has actually a very
 24 strong voice in setting the -- you know, the

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1 future practice in adolescents.

2 I think that they may be referring to
 3 the fact that there are a lot of things in
 4 trans health where people have different views.
 5 And I don't think that's different from other
 6 fields.

7 But where they all are in agreement is
 8 in supporting gender-affirming -- the
 9 availability of gender-affirming care for
 10 people. There may be a discussion about how
 11 much mental health evaluation ought to be done
 12 or how long somebody should, you know, have
 13 symptoms before treatment -- all of the
 14 arguments that get made in developing standards
 15 of care. And people may disagree on that.

16 But I think, you know, that Laura
 17 Edwards-Leeper and Erica Anderson also
 18 strongly, you know, stated that they opposed
 19 states trying to make care unavailable. And so
 20 it's really -- where everyone is in agreement
 21 is that this care is necessary. It's just a
 22 disagreement about -- the disagreements are
 23 just about how to provide the best care.

24 **Q. In paragraph 62, the citation to**

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1 **Coleman, et al., 2012, that's to WPATH SOC 7,**
 2 **right?**

3 A. Yes.

4 **Q. Let me pull this up. Are you able to**
 5 **see that on your screen?**

6 A. Yes.

7 MR. DAVID: We'll go ahead and mark
 8 WPATH SOC -- Standards of Care 7 as
 9 Exhibit 7.

10 (Exhibit 7 was marked.)

11 **Q. I'll show you where I'm at here. This**
 12 **is under Psychological and Social Interventions**
 13 **for Children and Adolescents. The page at the**
 14 **bottom is page 16 of SOC 7. Specifically, I'm**
 15 **asking if -- I'm going to highlight this. It**
 16 **says, Treatment aimed at trying to change a**
 17 **person's gender identity and expression to**
 18 **become more congruent with sex assigned at**
 19 **birth has been attempted in the past without**
 20 **success.**

21 You have citation, or -- not you --
 22 this has citations to Gelder and Marks 1969,
 23 Greenson, 1964. Particularly in the long-term,
 24 Cohen-Kettenis & Kuiper --

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1 A. Kuiper, yeah.
 2 **Q. Kuiper. Okay.**
 3 **-- Pauley, 1965. Such treatment is no**
 4 **longer considered ethical.**
 5 **I'm not going to ask you if I read that**
 6 **correctly because I butchered it.**
 7 **But is this the part of SOC 7 that you**
 8 **are referring to in your citation of**
 9 **paragraph 62 of your report?**
 10 ATTORNEY SMITH: Object to form.
 11 A. Yes. I believe there are two mentions
 12 in Standards of Care 7. But, yes. And so I
 13 was referring to that as well as much more
 14 recent, an American Psychological Association
 15 report on conversion therapy. I mean, there
 16 are other references one could make,
 17 including -- there have been a couple of
 18 recent -- American Psychiatric Association
 19 opposition statements as well. But this is
 20 one -- one of their references because it is in
 21 Standards of Care 7.
 22 **Q. Are you familiar with the literature**
 23 **that is cited here in Standards of Care 7?**
 24 ATTORNEY SMITH: Object to form.

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1 A. I believe at some point I looked it up,
 2 you know, that 1960s references are a very
 3 old -- I can remember Ralph Greenson from when
 4 I was a child actually. He didn't care for me.
 5 But he did care for people I knew. And he was
 6 at UCLA back in the -- you know, back in the
 7 '60s and '70s.
 8 So -- but what I would say is there are
 9 updated references in Standards of Care 8, and
 10 that the American Psychological Association has
 11 a whole -- documents specifically on conversion
 12 therapy -- on their opposition to conversion
 13 therapy that came out recently, which was my
 14 other citation.
 15 And there isn't a lot of data on
 16 conversion therapy. Because most of the
 17 reports of its success or lack of success were
 18 like single psychoanalytic cases. But there's
 19 more robust literature about it in later
 20 publications. You remember, this Standards of
 21 Care 7 was released in 2011.
 22 **Q. And I just -- I think I asked you this,**
 23 **and I apologize. I'm just trying to be clear**
 24 **here. Are you suggesting that Dr. Levine**

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1 **engages in conversion therapy?**
 2 ATTORNEY SMITH: Object to the form;
 3 asked and answered.
 4 A. No. I really don't know what kind of
 5 therapy he engages in. But there was the
 6 suggestion I believe in his report that -- of
 7 psychotherapy as an alternative for the people
 8 for whom surgery is indicated. I don't see
 9 that as being, you know, accepted as, you know,
 10 a reasonable alternative for the people who do
 11 need gender-affirming surgery.
 12 **Q. Is all psychotherapy for individuals**
 13 **who meet the criteria -- the DSM-5 criteria for**
 14 **gender dysphoria is all psychotherapy**
 15 **conversion therapy?**
 16 ATTORNEY SMITH: Object to form.
 17 A. No, not at all. Many people get
 18 psychotherapy who are transgender. Just like
 19 cisgender people get psychotherapy of all
 20 sorts, very often to help them manage stress or
 21 for treatment of anxiety disorders or treatment
 22 of depression.
 23 **Q. One of the reasons that I wanted to ask**
 24 **you about those particular 1960s references**

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1 **that are in there is because you had mentioned**
 2 **that -- previously that the DSM-IV was outdated**
 3 **in terms of the diagnostic criteria. I assume**
 4 **that these 1960s references are even more**
 5 **outdated?**
 6 ATTORNEY SMITH: Object to form.
 7 A. So there has not -- there's not been
 8 literature since then. There's not been a body
 9 of literature to demonstrate efficacies for
 10 conversion therapy. And so I presume -- I did
 11 not write this part of Standards of Care 7.
 12 Although, I was one of the authors of the
 13 document as a whole. And I assume that they
 14 really had a hard time finding kind of
 15 professional literature and had to go far back.
 16 But the idea -- the opposition to
 17 conversion therapy, you know, I think was a
 18 consensus idea in Standards of Care 7. And
 19 there are more citations if you look at -- if
 20 you look at more modern publications.
 21 **Q. And I will go ahead and pull up one of**
 22 **those articles.**
 23 ATTORNEY SMITH: Caleb, can we take a
 24 five-minute break?

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1 MR. DAVID: Sure. Absolutely. Let's
 2 go off the record.
 3 ATTORNEY SMITH: Let's make that a
 4 ten-minute break.
 5 THE COURT REPORTER: We are off.
 6 VIDEOGRAPHER: We went off at 1652.
 7 (Break in proceedings.)
 8 VIDEOGRAPHER: Back on the record at
 9 1702.
 10 BY MR. DAVID:
 11 Q. Doctor, right before we took the break,
 12 I was about to pull up one of those studies
 13 that was cited in Standards of Care 7. I will
 14 do that now. So this was cited -- it's August
 15 1965. It's titled, Male Psychosexual
 16 Inversion, Transsexualism.
 17 ATTORNEY SMITH: Caleb, I'm sorry to
 18 interrupt you.
 19 Kirk, I think you're not on mute.
 20 MR. AUVIL: I realized that. My bad.
 21 Q. Doctor, can you see that on my screen?
 22 A. Yes.
 23 Q. And it's titled, Male Psychosexual
 24 Inversion, Transsexualism, correct?

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1 A. Yes.
 2 Q. And do you recognize this as one of
 3 those articles that was cited in Standards of
 4 Care 7?
 5 A. I believe so.
 6 Q. If we go down to -- this is talking
 7 about -- I'll show you where -- I don't know
 8 why it's doing this. I don't know if it looks
 9 weird to you guys too (indicating).
 10 So they're talking about the results of
 11 surgery, and -- let me scroll down to where I
 12 was looking -- also mentioning psychotherapy.
 13 So I will read from this paragraph here that
 14 I'm highlighting. Those who favor the
 15 operation point out that the psychological
 16 determinants of sexual role behavior are more
 17 significant than the psychological ones. They
 18 question the priority given to the external
 19 anatomy when it has been demonstrated that this
 20 is not nearly as important in determining
 21 gender role as other factors. Why force the
 22 patient against his will into prolonged
 23 psychotherapy when his chance for change is
 24 poor? They maintain that the operation is

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1 faster, more economical, and most important, it
 2 is successful, and therefore it is inhumane to
 3 refuse help to these desperately unhappy
 4 individuals. More than once has the surgeon's
 5 scalpel been prompted by suicide attempts or
 6 self-mutilation. Somatic treatment for
 7 emotional or psychiatric disease is well
 8 accepted, and procedures such as prefrontal
 9 lobotomy and electroconvulsive therapy have
 10 been used empirically for relief of symptoms.
 11 First, did I read that correctly?
 12 A. Yes.
 13 Q. This certainly isn't something that you
 14 would rely upon today, correct?
 15 ATTORNEY SMITH: Object to form.
 16 A. No. And what I would say is that it
 17 is -- there is an absence of literature to the
 18 efficacy of conversion therapy. Not that these
 19 1960s papers are consistent with our
 20 perspective of care today. And it may be more
 21 useful to look at more recent papers about --
 22 you know, on conversion therapy than to look at
 23 these citations.
 24 MR. DAVID: If I didn't say it

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1 before, we'll mark this article as
 2 Exhibit 8.
 3 (Exhibit 8 was marked.)
 4 Q. I know it seems like it was probably a
 5 week ago. But at the beginning of your
 6 deposition, we talked a little bit about the
 7 patient population that you treat. And I don't
 8 know that I asked you, or if I did, I forget
 9 and I apologize. Currently are you seeing more
 10 patients who are adolescents or adults?
 11 ATTORNEY SMITH: Object to form.
 12 A. So as I say, I don't -- in my private
 13 practice, I don't really keep much in the way
 14 of statistics. But I looked at, you know, my
 15 schedule over a few days and just kind of -- to
 16 answer this question in a sense of my practice
 17 now, and -- so about a third from this sample
 18 of my practice -- about a third of my patients
 19 were people I started seeing in adolescence,
 20 so -- were minors, or people I started seeing
 21 as minors but have turned 18, you know,
 22 relatively recently. About a third were people
 23 I started seeing as adults. And those
 24 two-thirds are trans. And about a third were

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<p style="text-align: right;">Page 158</p> <p>1 cisgender. I see a handful of cisgender 2 adolescents. But most of the adolescents I see 3 are transgender.</p> <p>4 Q. And in the last five years, have you 5 seen an increase in the number of teenagers who 6 have sought treatment for gender dysphoria?</p> <p>7 ATTORNEY SMITH: Object to form. 8 A. So my practice is -- if I'm looking at 9 my own experience, it may not be 10 representative. I need to divide it 11 pre-retirement and post-retirement. So 12 pre-retirement, for 17 years, I was -- as part 13 of my work, I was a psychiatrist at a clinic 14 that took care of transgender adolescents and 15 young adults.</p> <p>16 And interestingly, that patient 17 population was predominantly assigned female at 18 birth from the start. And in terms of sheer 19 numbers -- I'm sure the number of patients at 20 that clinic grew, but not really that much 21 because -- I think because other treatment 22 alternatives opened up over time. Because then 23 we had, not just the clinic I was working in, 24 but also the Child and Adolescents Gender</p>	<p style="text-align: right;">Page 160</p> <p>1 getting clinical care versus one in 200? So 2 you might look at, is that share of people who 3 were transgender, are they more likely to get 4 care now? And I think that in the past decade 5 there have been some changes where people might 6 be more likely to get care. And that includes 7 the increase in insurance payment for care, 8 insurance coverage for care and the 9 availability of care and care providers who can 10 provide that care.</p> <p>11 And so it may well be -- I don't know 12 if we know the number of transgender people, 13 you know, is changing. But it may be that more 14 are seeking care because they can.</p> <p>15 Q. I don't know if you were specifically 16 thinking of certain literature. You mentioned 17 the number of one in 200. Is that something 18 that you got from literature?</p> <p>19 ATTORNEY SMITH: Object to form. 20 A. So, yes. There are -- have been a 21 number of studies starting with Conron, I 22 believe, in 2012, where they started in the 23 U.S. -- well, it was published in 2012. But 24 actually it was data from a few years earlier.</p>
<p style="text-align: right;">Page 159</p> <p>1 Clinic. So there was another place for trans 2 youth to go.</p> <p>3 So I didn't -- I saw I think similar 4 amounts of patients. And I happened to have a 5 patient population that was predominantly 6 assigned female at birth from early on. I 7 understand that's not the experience of, you 8 know, other people.</p> <p>9 Q. So is it your understanding that at 10 least -- and I don't know if it's worldwide, or 11 at least nationwide -- that currently there is 12 a rise in the number of adolescents who are 13 seeking treatment for gender dysphoria?</p> <p>14 ATTORNEY SMITH: Object to form. 15 A. Yes. It's my understanding that there 16 has been an increase in the number of 17 adolescents seeking treatment.</p> <p>18 Q. Do you have an opinion or an 19 explanation of why that is occurring?</p> <p>20 ATTORNEY SMITH: Object to form. 21 A. So I think that any explanation needs 22 to be multifactorial. One part, which I think 23 is an important part -- remember how we talked 24 about only maybe one in a thousand trans people</p>	<p style="text-align: right;">Page 161</p> <p>1 But they started asking in large health surveys 2 in the United States and elsewhere, are you 3 transgender, or how do you identify in terms of 4 your gender identity? And those questions had 5 not been asked before on a large population 6 basis.</p> <p>7 And so since then, there have been a 8 number of publications where the total 9 piggybacked on a few large health surveys that 10 .5 to .6 percent of adults and around .6 to 11 .7 percent of adolescents or youth I think 12 are -- will say yes to the are you transgender 13 question.</p> <p>14 Q. Have there been similar studies or 15 similar surveys done in the last few years?</p> <p>16 ATTORNEY SMITH: Object to form. 17 A. So these studies -- I think in the ones 18 I cited may have been 2016, 2017, the last 19 maybe round of information gathering where they 20 asked those questions. But I would have to 21 check out those papers. So in the greater 22 scheme of things, relatively recently.</p> <p>23 Q. I forgot earlier to ask you if you were 24 familiar with de Vries' 2021 study on the</p>

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<p>1 reliability and clinical utility of gender 2 identity-related diagnoses between DSM-IV and 3 DSM-5? 4 ATTORNEY SMITH: Object to form. 5 A. I don't recall that article, and I 6 don't recall whether I've reviewed it. 7 Q. Okay. I'll go ahead and pull it up 8 just -- 9 A. Okay. 10 Q. You can see it's titled, Reliability 11 and Clinical Utility of gender identity-related 12 diagnoses, comparisons between the ICD-11, 13 ICD-10 and DSM-IV and DSM-5, correct? 14 A. Yes. 15 Q. You can see this was published in 2021, 16 correct? 17 A. Yes. 18 Q. And are you familiar with this article? 19 A. It doesn't look familiar. I know 20 that -- kind of the subject matter and the 21 authors. But it doesn't look familiar to me. 22 Q. Okay. And I'll just read to you parts 23 of this abstract. First, the purpose, The 24 World Health Organization general assembly</p>	<p>1 examine reliability and clinical utility of 2 ICD-10, ICD-11, DSM-IV and DSM-5? 3 ATTORNEY SMITH: Object to form. And 4 also I think I heard Dr. Karasic mention 5 he wasn't familiar with this. So, Caleb, 6 if you want to give him a chance to at 7 least look over it, that would probably be 8 beneficial. 9 A. Thank you. Let me just answer one part 10 of your question though. 11 Q. Sure. 12 A. The purpose of this study -- you know, 13 I can see, and from people involved -- so 14 ICD-11 is being adopted outside of the United 15 States. And Annelou de Vries is in the 16 Netherlands. They did a series of studies in 17 adopting gender incongruence to see whether it 18 was kind of comparable essentially in terms of 19 its reliability and clinical utility to the 20 previous diagnoses. So I don't believe -- I'm 21 not familiar with the article. 22 But I don't believe that the purpose of 23 the study was to make a judgment on the 24 reliability and clinical utility of ICD-10,</p>
<p>Page 163</p> <p>1 approved the 11th revision of the International 2 Classification of Diseases, ICD, in 2019, which 3 will be implemented in 2022. Gender 4 identity-related diagnoses were substantially 5 reconceptualized and removed from the mental 6 health chapter so that the distress criterion 7 is no longer a prerequisite. 8 The present study examined reliability 9 and clinical utility of gender identity-related 10 diagnoses of the ICD-11 in comparison with the 11 diagnostic and statistical manual of mental 12 disorders DSM-5, ICD-10 and DSM-IV. 13 Did I read that correctly? 14 A. Yes. 15 ATTORNEY SMITH: Caleb, not to 16 interrupt. Did you mark this as an 17 exhibit? I'm sorry if I didn't catch 18 that. 19 MR. DAVID: No. I think you're 20 right. 21 We'll mark this study as Exhibit 9. 22 (Exhibit 9 was marked.) 23 Q. Is it your understanding from reading 24 this that the purpose of this study was to</p>	<p>Page 165</p> <p>1 DSM-5 or DSM-IV, but rather to say that -- you 2 know, to -- as kind of a demonstration that the 3 ICD-11 and gender incongruence utility was in 4 line with those. 5 Does that distinction make sense? 6 Q. Kind of. As you can see on the screen, 7 the conclusion -- and I'll just read it. In 8 conclusion, both classification systems, DCM 9 and ICD, and both editions, DSM-IV and DSM-5, 10 and ICD-10 and ICD-11 of gender 11 identity-related diagnoses seem reliable and 12 convenient for clinical use. 13 ATTORNEY SMITH: Object to form. 14 Q. Did I read that correctly? 15 A. Yes, you did. 16 Q. And if you want to take a break and 17 read this, I'm happy to do that. But the way 18 that I read this is that essentially the 19 diagnoses under the DSM-IV and DSM-5 were 20 essentially the same? 21 ATTORNEY SMITH: Object to form. 22 A. I would disagree. 23 Q. You would disagree with my 24 interpretation, or with the results of the</p>

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1 study?

2 ATTORNEY SMITH: Object to form.

3 A. I disagree objectively that DSM-5 and
4 DSM-IV-TR are the same documents. They are
5 different.**6 Q. Okay. And so do you disagree that
7 DSM-IV and DSM-5 result in the same number of
8 individuals being diagnosed with gender
9 related -- gender identity-related diagnoses?**

10 ATTORNEY SMITH: Object to form.

11 A. So when I say -- just in the abstract
12 is -- they use videos of two children, two
13 adolescents and two adults. And they use --
14 they had people identify those two children,
15 two adolescents and two adults using each
16 classification system. And they found that
17 there was an agreement, 65 to 94 percent.
18 Among the 64 people using those -- the videos
19 of two children and two adolescents and two
20 adults.21 You can't conclude from that that the
22 documents are the same. You can only conclude
23 that when people look at these six hypothetical
24 patients - two children, two adolescents and

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1 two adults - that most of the time they would
2 come to the same diagnosis no matter which
3 diagnostic system they use.4 This was done specifically because
5 there was -- it was part of the field
6 testing -- I'm pretty sure that was part of the
7 field testing of ICD-11 to make sure that
8 ICD-11 was not -- didn't have less interrater
9 reliability than the previous versions. I
10 don't think the intent was to cast judgment on
11 DSM-5. ICD-10 or DSM-IV-TR were already in the
12 waste bin by this point.13 It was to demonstrate that you could
14 have similar interrater reliability and
15 agreement with the new diagnosis as you did
16 with the older ones. And so, you know,
17 specifically with the new diagnosis, they
18 weren't including the distress criteria that
19 was in DSM -- in both DSMs. And so I don't
20 think you can say this shows that all of them
21 are equivalent. I don't think this little
22 study of six -- of reviewing six people says
23 that at all.**24 Q. Do you think this study is reliable for**

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**1 looking at the interrater agreement rates for
2 ICD-11?**

3 ATTORNEY SMITH: Object to form.

4 A. I haven't read the whole thing in terms
5 of the percentages of interrater reliability of
6 each one. But I would just say that the
7 conclusions -- so, you know, may well be a good
8 study for its purpose, doing a little -- a
9 small study of interrater reliability and
10 gender incongruence versus the others. But you
11 can't draw broader conclusions than this kind
12 of narrow purpose that this study was for.13 And again, I haven't read the whole
14 thing, so I can't say all of the conclusions
15 that were drawn or the differences in
16 interrater agreement, you know, between each of
17 the instruments.**18 Q. Are you saying that the reliability
19 ratings for ICD-11 may be valid in this study,
20 but those ratings for DSM-IV can't be valid?**

21 ATTORNEY SMITH: Object to form.

22 A. No, I'm saying that there was an
23 attempt to see that there were similar
24 interrater agreement rates. That's my guess

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1 without having reviewed the whole study. And
2 they may or may not have done that. But you
3 can't -- you can't draw a conclusion that
4 there's no difference or that there -- you
5 know, the four documents are the same. Each
6 one has different, you know, criteria. And if
7 you compare the old ICD-10, you had to have two
8 years of -- it was -- transsexualism was the
9 original diagnosis. Two years of being a
10 transsexual to get the diagnosis. And ICD-11
11 is six months of gender incongruence. They're
12 totally different.13 But with the six videos, you know, you
14 can measure whether these 64 health providers
15 generally came up on the same diagnosis using
16 one instrument or another. So it has a
17 specific purpose. But you can't -- you know,
18 you can't make this broader -- these broader
19 claims about -- you know, about these
20 documents. And certainly the intent was not to
21 validate in some way the DSM-5, ICD-10 or
22 DSM-IV-TR. It was just to show that ICD-11 is
23 a comparable instrument.**24 Q. I'll go ahead and stop sharing that.**

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<p style="text-align: right;">Page 170</p> <p>1 I think that we're getting pretty close 2 here, Doctor. 3 Do you do any work on behalf of 4 insurance companies or to develop insurance 5 guidelines for coverage for gender-affirming 6 care? 7 ATTORNEY SMITH: Object to form. 8 A. I did do a series of meetings along 9 with medical directors of the University of 10 California student clinics when Standards of 11 Care 7 came out to assist Anthem Blue Cross 12 with updating their criteria from Standards of 13 Care 6 to Standards of Care 7. 14 So in terms of working with an 15 insurance company, I guess I did it -- not 16 employed by them, but we did kind of work 17 cooperatively so that their criteria would be 18 updated to Standards of Care 7 when that came 19 out in 2011, 2012. 20 Q. So when you say their criteria would be 21 updated, you're saying that the guidelines for 22 determination of coverage for that particular 23 company match the criteria, for instance, for 24 surgical therapy under Standards of Care 7?</p>	<p style="text-align: right;">Page 172</p> <p>1 gender-affirming care who appeal to the state 2 of California. And those are sent for 3 independent medical reviews. And I've done 4 many of them. 5 Q. In those instances where there have 6 been appeals, are you hired by the State of 7 California to do the independent medical 8 review? 9 ATTORNEY SMITH: Object to form. 10 A. The State of California hires a private 11 company. And what that private company does, 12 it gets independent medical reviewers for that 13 precise task. So the administrative task of 14 finding the independent medical reviewers and 15 sending them out all of the documents and 16 getting a report back from them is handled by a 17 private company. But the way the people who 18 get to me get to me because they have appealed 19 to the Department of Managed Health Care or the 20 Department of Insurance of the State of 21 California appealing their insurance denials. 22 Q. When you're doing an independent 23 medical review, what are you being asked to 24 make a determination on?</p>
<p style="text-align: right;">Page 171</p> <p>1 ATTORNEY SMITH: Object to form. 2 A. Yes. When -- obviously before 3 Standards of Care 7 were released, they used 4 older Standards of Care. And they recognized 5 that with the release of the new document, that 6 when they're referring to Standards of Care, 7 that they needed to refer to the updated 8 Standards of Care. 9 Q. Do you hold yourself out to be an 10 expert in developing insurance guidelines for 11 coverage for gender-affirming care? 12 ATTORNEY SMITH: Object to form. 13 A. I'm not sure -- quite sure what that 14 means. I don't think I've ever -- I'm not 15 quite sure what -- not being a lawyer -- what 16 holding yourself out as an expert means, per 17 se. 18 I certainly have a lot of experience 19 working with insurance criteria, both in being 20 involved with gender health programs with UCSF 21 and the San Francisco Department of Public 22 Health. And I also make -- have been in -- 23 done many independent medical reviews for 24 people denied insurance coverage for</p>	<p style="text-align: right;">Page 173</p> <p>1 ATTORNEY SMITH: Object to form. 2 A. The sole determination, is the care -- 3 is the requested care medically necessary. 4 Q. And what criteria do you use to make 5 the determination of whether the requested care 6 is medically necessary? 7 ATTORNEY SMITH: Object to form. 8 A. So in these cases, I don't meet or 9 interview the person requesting care. It's 10 entirely reviewing the documentation that is 11 there. And so I review the documentation. And 12 the State of California has some specific 13 requirements, including that it's meeting WPATH 14 Standards of Care criteria. 15 So I see whether their medical and 16 mental health providers have documented medical 17 necessity for that particular procedure based 18 on having a gender dysphoria diagnosis and 19 meeting WPATH's Standards of Care 7 criteria. 20 And then there's a short report that 21 needs to -- generally needs to quote something 22 from WPATH. And then also one or two other 23 citations to support the answer one way or the 24 other.</p>

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1 Q. Do you perform these independent
2 medical reviews for patients for any treatment
3 other than gender-affirming care?

4 ATTORNEY SMITH: Object to form.

5 A. So the company that does these have
6 requested if I would do this for other
7 patients. But I've limited it to transgender
8 patients just because it's not something I want
9 kind of taking up too much of my time.

10 So they can -- and they're looking for
11 experts. And so in this case, you know, the
12 company and the State of California deems me to
13 be an expert on making a determination of
14 medical necessity based on reviewing some of
15 these medical records for transgender surgery.

16 Q. What medical records are generally
17 provided to you to make those determinations?

18 ATTORNEY SMITH: Object to form.

19 A. So there are very often just a large
20 number of documents that are sent in -- the
21 medical record of the patient. If they get --
22 if they've had mental health evaluations for
23 surgery that have been separate from their
24 medical care, I get that. Then I get the

1 A. Uh-huh; yes.

2 Q. When you say categorical exclusion,
3 what is the category that's excluded?

4 ATTORNEY SMITH: Object to form.

5 A. So when I reviewed the Medicaid Managed
6 Care pamphlets, they said that there was an
7 exclusion for gender transforming surgery and
8 hormones. Later -- in kind of both talking
9 with the plaintiffs as well as the lawyers --
10 there was a question about the hormone part.
11 But the categorical exclusion is referring to
12 medically-necessary care for transgender
13 people.

14 Q. Is it your opinion that West Virginia
15 Medicaid does not cover any medically-necessary
16 care for transgender people?

17 ATTORNEY SMITH: Object to form.

18 A. Well, I have been informed that
19 Medicare now is paying for hormones. But, you
20 know, that's not what was stated in the
21 documents. It is still my understanding that
22 surgical care related to somebody's gender
23 dysphoria diagnosis is still excluded by the
24 State of West Virginia.

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1 reports from their surgical consultation.

2 Q. Have you done any research related to
3 what health insurers must and may not cover
4 under the Affordable Care Act?

5 ATTORNEY SMITH: Object to form.

6 A. I was familiar. And I did do some
7 reading. It related to at least one
8 publication and some other work that I was
9 doing of the, you know, implications of
10 Affordable Care Act in Section 1557 on the
11 lifting of transgender health exclusions and
12 the non-discrimination against transgender
13 patients and hospital.

14 Q. Do you intend to offer any opinions in
15 this case about the constitutionality of West
16 Virginia Medicaid's policy?

17 ATTORNEY SMITH: Object to form.

18 A. No. That sounds like a lawyer's job,
19 to make the argument about constitutionality.

20 Q. In your report, there are several
21 references to a categorical exclusion that you
22 claim that West Virginia Medicaid has. So I
23 assume you're familiar with what I'm talking
24 about?

1 Q. Some of these questions might seem
2 strange, but I'm just trying to make sure I
3 have a full picture here. You're not
4 suggesting that if a transgender person has
5 diabetes that West Virginia Medicaid is not
6 going to provide them with care for their
7 diabetes?

8 ATTORNEY SMITH: Object to form.

9 A. My suggestion is that -- we are talking
10 about treatments for gender dysphoria --

11 Q. Okay.

12 A. -- in transgender people.

13 Q. I'm sorry. I didn't mean to interrupt.

14 So the categorical exclusion as you've
15 stated in your report is for gender-affirming
16 surgeries for the treatment of gender
17 dysphoria; is that --

18 ATTORNEY SMITH: Object to form;
19 asked and answered.

20 A. Yes. So, yeah, it's for -- well, it's
21 for gender-affirming care. And if hormones are
22 being provided, then the other large category
23 of medical intervention is surgical. And so it
24 seems like there's still an exclusion for

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1 surgery for transgender people.

2 **Q. Are you aware of any treatment for**

3 **transgender people, whether for gender**

4 **dysphoria or not, that is not covered other**

5 **than gender-affirming surgeries?**

6 ATTORNEY SMITH: Object to form.

7 A. So I'm not aware of other care that's

8 not being provided other than gender-affirming

9 surgeries.

10 MR. DAVID: Doctor, let's take a

11 couple of minute break. And I'm going to

12 look through my notes. I think I'm done.

13 THE WITNESS: Just a couple of

14 minutes?

15 MR. DAVID: Yes.

16 Martha, are we off?

17 THE COURT REPORTER: Yes, we are off.

18 VIDEOGRAPHER: We went off at 1743.

19 (Break in proceedings.)

20 VIDEOGRAPHER: Back on the record at

21 1745.

22 BY MR. DAVID:

23 **Q. I promise I only have one more**

24 **question.**

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1 A. Okay.

2 **Q. On your first report that's been marked**

3 **as Exhibit 1, if you'll go to paragraph 34.**

4 **Are you there?**

5 A. Yes.

6 **Q. It says, Gender-affirming medical**

7 **interventions in accordance with WPATH SOC 7**

8 **and Endocrine Society Guidelines are widely**

9 **recognized in the medical community as safe,**

10 **effective and medically necessary for many**

11 **transgender people with gender dysphoria.**

12 **And then you have citations after that.**

13 **Did I read that correctly?**

14 A. Yes.

15 **Q. My question is, what does "safe" mean**

16 **in this context?**

17 ATTORNEY SMITH: Object to form.

18 A. So I think that they are widely

19 recognized as having benefits that greatly

20 exceed the risks. So not that, you know, any

21 kind of treatment he did entirely without risk.

22 But they're generally agreed upon as safe

23 interventions.

24 **Q. Just to paraphrase, you're not saying**

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1 **that there are never any adverse outcomes of**

2 **the treatment, but that the treatment is low**

3 **risk?**

4 ATTORNEY SMITH: Object to form.

5 A. Yes. You know, when -- if we're saying

6 collectively the treatments are low risk, there

7 certainly are treatments that have more risk

8 than those that have less risk. But overall,

9 they're agreed upon as safe and effective

10 treatments which is a descriptor that is often

11 used to describe a set of -- the kind of care,

12 you know.

13 MR. DAVID: Those are all the

14 questions I have for you, Doctor. Thank

15 you very much. I really appreciate it on

16 a Friday to spend this much time with me.

17 Thank you.

18 ATTORNEY SMITH: Actually, can we

19 take a 20-minute break?

20 MR. DAVID: Sure.

21 VIDEOGRAPHER: Going off the record

22 at 1749.

23 (Break in proceedings.)

24 VIDEOGRAPHER: Back on the record at

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1 1814.

2 ATTORNEY SMITH: We have no further

3 questions for Dr. Karasic.

4 So, Caleb, Dr. Karasic will read and

5 sign.

6 MR. DAVID: Thanks, everyone. Have a

7 great weekend. And if you celebrate, have

8 a great Easter.

9 VIDEOGRAPHER: Off the record at

10 1814.

11 (Deposition concluded at 6:14 p.m.)

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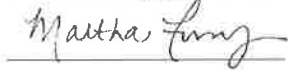
Page 182

1 I, Martha Fourney, Certified Court
2 Reporter and Notary Public, do hereby certify
3 that the foregoing deposition of the
4 above-named witness, was duly taken by me in
5 machine shorthand, was recorded via Zoom, and
6 that the same were accurately written out in
7 full and reduced to computer transcription.

8 I further certify that I am neither
9 attorney or counsel for, nor related to or
10 employed by, any of the parties to the action
11 in which this deposition is taken, nor do I
12 have a financial interest in the action.

13
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21
22
23
24

My commission expires May 27, 2022



Martha Fourney

Certified Court Reporter/Notary Public

Confidential

SIGNATURE/ERRATA SHEET

I, DAN KARASIC, hereby certify I have read the foregoing transcript and that the same is a true and accurate transcription of my testimony, except as noted below:

PAGE: LINE: CHANGE: REASON FOR CHANGE:

See Attachment A.



DAN KARASIC

STATE OF VIRGINIA

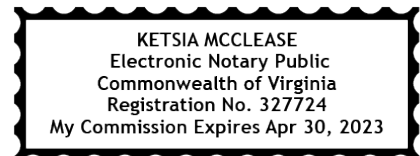
COUNTY OF NORFOLK

Subscribed and sworn to before me this

 6 day of May , 2022.



Notary Public



My Commission Expires: 04/30/2023

This notarial act was performed online by way of two-way audio/video communication technology.

ATTACHMENT A

Errata Sheet

Fain, et al. v. Crouch, et al.
 Dan Karasic, MD

Page	Line	Correction
19	23	“gender identity” not “a gender identity”
21	2-3	“develops” not “develops as”
30	1	“across” not “cross”
33	16	“they’re coming” not “coming”
41	22-23	“that of the Child and Adolescent Gender Center,” not “that of a child in the Adolescent Gender Center”
75	21	“as a term” not “as to term”
87	1	“the study” not “my study”
126	10	“orchiectomy” not “oophorectomy”
126	13	“orchiectomy” not “oophorectomy”
126	17	“orchiectomy” not “oophorectomy”
158-9	24-1	“Child and Adolescent Gender Center” not “Child and Adolescents Gender Clinic”
167	8-9, 14	“inter-rater” not “interrater”
168	5, 9, 16, 24	“inter-rater” not “interrater”
179	21	“is” not “he did”



 Dan Karasic

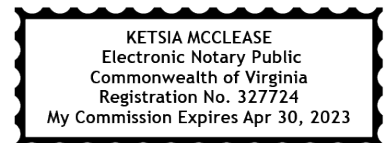
State of Virginia

County of Norfolk

Subscribed and sworn to before me this 6 day of May 2022.



 Notary Public



My Commission Expires: 04/30/2023

This notarial act was performed online by way of two-way audio/video communication technology.

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

CHRISTOPHER FAIN, *et al.*,
individually and on behalf of all others
similarly situated,

Plaintiffs,

v.

WILLIAM CROUCH, *et al.*,

Defendants.

CIVIL ACTION NO. 3:20-cv-00740
HON. ROBERT C. CHAMBERS

CERTIFICATE OF SERVICE

I hereby certify that the EXPERT DISCLOSURE REPORT OF DAN H. KARASIC,
M.D. was served electronically on the 14th day of January, 2022 on the following counsel for
Defendants in the above-captioned case:

Lou Ann S. Cyrus (WVSB # 6558)
Roberta F. Green (WVSB #6598)
Caleb B. David (WVSB #12732)
Kimberly M. Bandy (WVSB #10081)
SHUMAN MCCUSKEY SLICER PLLC
P.O. Box 3953, Charleston, WV 25339
(304) 345-1400; (304) 343-1826 (fax)
lcyrus@shumanlaw.com
rgreen@shumanlaw.com
cdavid@shumanlaw.com
kbandy@shumanlaw.com

*Attorneys for Defendants William Crouch;
Cynthia Beane; and West Virginia
Department of Health and Human Resources,
Bureau for Medical Services*

Eric D. Salyers (WVSB #13042)
Perry W. Oxley (WVSB # 7211)
David E. Rich (WVSB #9141)
Christopher K. Weed (WVSB #13868)
OXLEY RICH SAMMONS, PLLC
P.O. Box 1704
517 9th Street, Suite 1000
Huntington, West Virginia 25718
Phone: (304) 522-1138
Fax: (304) 522-9528
poxley@oxleylawwv.com
drich@oxleylawwv.com
esalyers@oxleylawwv.com
cweed@oxleylawwv.com

Attorneys for Defendant Jason Haught

Dated: January 14, 2022

Respectfully submitted,

s/ Walt Auvil

Walt Auvil, WV Bar No. 190
THE EMPLOYMENT LAW CENTER, PLLC
1208 Market Street
Parkersburg, WV 26101
Phone: 304-485-3058
Facsimile: 304-485-3058
auvil@theemploymentlawcenter.com

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

CHRISTOPHER FAIN, *et al.*,
individually and on behalf of all others
similarly situated,

Plaintiffs,

v.

WILLIAM CROUCH, *et al.*,

Defendants.

CIVIL ACTION NO. 3:20-cv-00740
HON. ROBERT C. CHAMBERS

EXPERT DISCLOSURE REPORT OF DAN H. KARASIC, M.D.

1. My name is Dan H. Karasic. I have been retained by counsel for plaintiffs Christopher Fain, Shauntae Anderson, and Leanne James (collectively, “Plaintiffs”) as an expert in connection with the above-captioned litigation.

2. The following is a summary of my opinions in this case:

- The exclusions in West Virginia’s state employee health plans and Medicaid Program (together, the “Exclusion”) bar coverage for medical treatments that are part of widely-accepted medical protocols for the treatment of transgender people with gender dysphoria that are recognized by major medical and mental health professional associations in the United States.
- The accepted protocols for the treatment of transgender people with gender dysphoria provide for mental-health assessments, including of co-occurring conditions; criteria for eligibility for each treatment; and an informed consent process before medical interventions are initiated.
- Decades of medical research and clinical experience have demonstrated that the medical treatments barred from coverage by the Exclusion are safe, effective, and medically-necessary to relieve gender dysphoria for transgender people.
- Denying gender-affirming medical care to transgender people for whom it is medically indicated puts them at risk of significant harm to their health and well-being, including heightened risk of depression and suicidality.

- For transgender people for whom gender-affirming medical care is indicated, no alternative treatments have been demonstrated to be effective.

3. I have actual knowledge of the matters stated herein. If called to testify in this matter, I would testify truthfully and based on my expert opinions.

I. BACKGROUND AND QUALIFICATIONS

4. I am a Professor Emeritus of Psychiatry at the UCSF Weill Institute for Neurosciences. I have been on faculty at the University of California – San Francisco since 1991. I have also had a telepsychiatry private practice since 2020.

5. I received my Doctor of Medicine (M.D.) degree from the Yale Medical School in 1987. In 1991, I completed my residency in psychiatry at the University of California – Los Angeles Neuropsychiatric Institute, and from 1990 to 1991 I was a postdoctoral fellow in a training program in mental health services for persons living with AIDS at UCLA.

6. For over 30 years, I have worked with patients with gender dysphoria. I am a Distinguished Fellow of the American Psychiatric Association and currently the chair of the American Psychiatric Association Workgroup on Gender Dysphoria, as well as the sole author of the chapter on transgender care in the American Psychiatric Press's Clinical Manual of Cultural Psychiatry, Second Edition.

7. Over the past 30 years, I have provided care for thousands of transgender patients. For 17 years, I was the psychiatrist for the Dimensions Clinic for transgender youth in San Francisco.

8. I previously sat on the Board of Directors of the World Professional Association for Transgender Health (WPATH) and am a co-author of the *WPATH Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People*, Version 7, which are

the internationally accepted guidelines designed to promote the health and welfare of transgender, transsexual, and gender variant persons. I remain active in the work of WPATH. For the upcoming WPATH Standards of Care, Version 8, I am the lead author on the Mental Health chapter.

9. As a member of the WPATH Global Education Initiative, I helped develop a specialty certification program in transgender health and helped train over 2,000 health providers. At UCSF, I developed protocols and outcome measures for the Transgender Surgery Program at the UCSF Medical Center. I also served on the Medical Advisory Board for the UCSF Center of Excellence for Transgender Care, and co-wrote the mental health section of the original *Guidelines for the Primary and Gender-Affirming Care of Transgender and Gender Nonbinary People* and the revision in 2016.

10. I have also worked with the San Francisco Department of Public Health, having developed and implemented their training program for the care of transgender patients and for mental health assessments for gender-affirming surgery. I served on the City and County of San Francisco Human Rights Commission's LGBT Advisory Committee, and I have been an expert consultant for California state agencies and on multiple occasions for the United Nations Development Programme on international issues in transgender care.

11. I have held numerous clinical positions concurrent to my clinical professorship at UCSF. Among these, I served as an attending psychiatrist for San Francisco General Hospital's consultation-liaison service for AIDS care, as an outpatient psychiatrist for HIV-AIDS patients at UCSF, as a psychiatrist for the Transgender Life Care Program and the Dimensions Clinic at Castro Mission Health Center, and the founder and co-lead of the UCSF Alliance Health Project's Transgender Team. In these clinical roles, I specialized in the evaluation and treatment of transgender, gender dysphoric, and HIV-positive patients. I also regularly provide consultation on

challenging cases to psychologists and other psychotherapists working with transgender and gender dysphoric patients. I have been a consultant in transgender care to the California Department of State Hospitals and am currently a consultant for the California Department of Corrections and Rehabilitation on the care of incarcerated transgender people.

12. In addition to this work, I have done research on the treatment of depression. I have authored many articles and book chapters, and edited the book *Sexual and Gender Diagnoses of the Diagnostic and Statistical Manual (DSM): A Reevaluation*.

13. In preparing this report, I have relied on my training and years of research and clinical experience, as set out in my curriculum vitae, and on the materials listed therein. A true and accurate copy of my curriculum vitae is attached hereto as Exhibit A. It documents my education, training, research, and years of experience in this field and includes a list of publications.

14. I have also reviewed the materials listed in the attached bibliography (Exhibit B). The sources cited therein include authoritative, scientific peer-reviewed publications. They include the documents specifically cited as supportive examples in particular sections of this report.

15. I also rely upon my interviews of Ms. Anderson, Ms. James, and Mr. Fain, on December 17-9, 2021, and plaintiffs' mental health and medical records.

16. Additionally, I have reviewed the First Amended Class Action Complaint in this case.

17. The materials I have relied upon in preparing this report are the same types of materials that experts in my field of study regularly rely upon when forming opinions on the subject. I reserve the right to revise and supplement the opinions expressed in this report or the bases for them if any new information becomes available in the future, including as a result of new

scientific research or publications or in response to statements and issues that may arise in my area of expertise.

Prior Testimony

18. In the last four years, I have testified as an expert by deposition in *Kadel v. Folwell*, 1:19-cv-00272 (M.D.N.C.).

Compensation

19. I am being compensated for my work on this matter at a rate of \$400.00 per hour for preparation of declarations and expert reports. I will be compensated \$3,200.00 per day for any deposition testimony or trial testimony. My compensation does not depend on the outcome of this litigation, the opinions I express, or the testimony I may provide.

II. EXPERT OPINIONS

Gender Identity

20. Sex assigned at birth refers to the sex assigned to a person at the time of their birth, typically based on the appearance of external genital characteristics. While the terms “male sex” and “female sex” are sometimes used in reference to a person’s genitals, chromosomes, and hormones, the reality is that sex is complicated and multifactorial. Aside from external genital characteristics, chromosomes, and endogenous hormones, other factors related to sex include gonads, gender identity, and variations in brain structure and function. Because these factors may not always be in alignment as typically male or typically female, “the terms biological sex and biological male or female are imprecise and should be avoided.” (Hembree, et al., 2017).

21. Gender identity is “a person’s deeply felt, inherent sense of being a girl, woman, or female; a man, or male; a blend of male or female; or an alternative gender” (American Psychological Association, 2015, at 834). Gender identity does not always align with sex assigned

at birth. Gender identity, which has biological bases, is not a product of external influence and not subject to voluntary change. As documented by multiple leading medical authorities, efforts to change a person's gender identity are ineffective, can cause harm, and are unethical. (American Psychological Association, 2021, Byne, et al., 2018, Coleman, et al., 2012).

Gender Dysphoria and its Treatment

22. The term "gender dysphoria" (uncapitalized) is distress related to the incongruence between one's gender identity and attributes related to one's sex assigned at birth.

23. The diagnosis of Gender Dysphoria in the Diagnostic and Statistical Manual Fifth Edition (DSM-5), released in 2013, involves two major diagnostic criteria for adolescents and adults:

- A. A marked incongruence between one's experienced/expressed gender and assigned gender, of at least 6 months duration, as manifested by at least two of the following (one of which must be Criterion A1):
 1. A marked incongruence between one's experienced/expressed gender and primary or secondary sex characteristics.
 2. A strong desire to be rid of one's primary and/or secondary sex characteristics because of a marked incongruence with one's experienced/expressed gender.
 3. A strong desire for the primary and/or secondary sex characteristics of the other gender.
 4. A strong desire to be of the other gender (or some alternative gender different from one's assigned gender).
 5. A strong desire to be treated as the other gender (or some alternative gender different from one's assigned gender).
 6. A strong conviction that one has the typical feelings and reactions of the other gender (or some alternative gender different from one's assigned gender).

- B. The condition is associated with clinically significant distress or impairment in social, occupational, or other important areas of functioning.

24. The World Professional Association of Transgender Health (WPATH) has issued *Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People* (“WPATH SOC”) since 1979. The current version is WPATH SOC 7, with WPATH SOC 8 due out in early 2022. WPATH SOC 7 provides guidelines for multidisciplinary care of transgender individuals and describes criteria for medical interventions to treat gender dysphoria, including hormone treatment and surgery when medically indicated. WPATH SOC 7 also states, “Treatment aimed at trying to change a person’s gender identity and expression ... is no longer considered ethical,” because it is known to be ineffective and can cause harm to patients.

25. The WPATH Standards of Care are endorsed and cited as authoritative by many professional medical associations including the American Medical Association, the American Academy of Pediatrics, the American Psychiatric Association, the American Psychological Association, the Endocrine Society, the Pediatric Endocrine Society, the American College of Obstetrics and Gynecology, the American College of Physicians, and the World Medical Association, among others.

26. A clinical practice guideline from the Endocrine Society (the Endocrine Society Guideline) provides similar protocols for the medically necessary treatment of gender dysphoria. (Hembree, et al., 2017).

27. Being transgender is widely accepted as a variation in human development, and is not considered a mental illness. People who are transgender have no impairment in their ability to be productive, contributing members of society simply because of their transgender status. The American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders, Fifth

Edition (DSM 5) states: Gender dysphoria “is more descriptive than the previous DSM-IV term ‘gender identity disorder’ and focuses on dysphoria as the clinical problem, not identity per se.” (APA, 2013). WPATH states in SOC 7, “[b]eing transsexual, transgender, or gender-nonconforming is a matter of diversity, not pathology.... Thus, transsexual, transgender, and gender-nonconforming individuals are not inherently disordered. Rather, the distress of gender dysphoria, when present, is the concern that might be diagnosable and for which various treatment options are available.” The American Psychological Association states, “[w]hereas diversity in gender identity and expression is part of the human experience and transgender and gender nonbinary identities and expressions are healthy, incongruence between one’s sex and gender is neither pathological nor a mental health disorder.” (American Psychological Association, 2021). The World Health Organization states, “[g]ender incongruence has thus broadly been moved out of the ‘Mental and behavioural disorders’ chapter and into the new ‘Conditions related to sexual health’ chapter. This reflects evidence that trans-related and gender diverse identities are not conditions of mental ill health, and classifying them as such can cause enormous stigma.” (WHO Europe).

28. The overarching goal of treatment is to eliminate the distress of gender dysphoria by aligning an individual patient’s body and presentation with their internal sense of self. The denial of medically indicated care to transgender people not only results in the prolonging of their gender dysphoria, but causes additional distress and poses other health risks, such as depression, posttraumatic stress disorder, and suicidality. In other words, lack of access to gender-affirming care directly contributes to poorer mental health outcomes for transgender people. (Owen-Smith, et al., 2018).

29. For patients for whom gender-affirming medical care is indicated, no alternative treatments have been demonstrated to be effective. The American Psychological Association states that gender identity change efforts provide no benefit and instead do harm. (American Psychological Association, 2021).

30. Accordingly, major medical organizations, such as the American Medical Association, American Psychiatric Association, the Endocrine Society, American College of Obstetricians and Gynecologists, and American Academy of Family Physicians oppose the denial of this medically necessary care and support public and private health insurance coverage for treatment of gender dysphoria as recommended by the patient's physician. (American Medical Association, 2021; American Psychiatric Association, 2018; Endocrine Society, 2012; American College of Obstetricians and Gynecologists, 2021; American Academy of Family Physicians, 2020).

Treatment of Gender Dysphoria

31. Gender dysphoria is a condition that is highly amenable to treatment, and the prevailing treatment for it is highly effective. With access to medically-indicated care, transgender people can experience significant and potentially complete relief from their symptoms of gender dysphoria.

32. The WPATH SOC 7 and the Endocrine Society Guideline establish authoritative protocols for the treatment of gender dysphoria.

33. Treatment protocols for gender dysphoria are comparable to those for other mental health and medical conditions. WPATH lists medically necessary treatments, which include, for example, hormones, genital surgery, including vaginoplasty and orchiectomy for people assigned male at birth, and hysterectomy, oophorectomy, metoidioplasty, phalloplasty for people assigned

female at birth; chest/breast surgery, and gender-affirming facial surgery. (WPATH 2016). These or similar procedures are done on cisgender people with other diagnoses.

34. Gender-affirming medical interventions in accordance with the WPATH SOC 7 and Endocrine Society Guidelines are widely recognized in the medical community as safe, effective, and medically necessary for many transgender people with gender dysphoria. (*See* American Academy of Pediatrics, 2018; the American Medical Association, 2021; the Endocrine Society, 2020, the Pediatric Endocrine Society, 2021; the American Psychiatric Association, 2018; the American Psychological Association, 2021; the American Congress of Obstetricians and Gynecologists, 2021; the American Academy of Family Physicians, 2020; WPATH, 2012).

35. There is substantial evidence that hormone therapy and/or surgical care are effective in treating gender dysphoria. This evidence includes scientific studies assessing mental health outcomes for transgender people who are treated with these interventions, and decades of clinical experience.

36. The research and studies supporting the necessity, safety, and effectiveness of counseling, hormone therapy, and surgical care for gender dysphoria are the same type of evidence-based data that the medical community routinely relies upon when treating other medical conditions.

37. Medical treatment for gender dysphoria has been studied for over half a century, and there is substantial evidence that it improves quality of life and measures of mental health. (Aldridge et al., 2020; Alamazon, et al., 2021; Baker et al., 2021; Murad, et al., 2010; Nobili et al., 2018; Pfafflin & Junge, 1998; T'Sjoen et al. 2019; van de Grift et al., 2017; White Hughto and Reisner, 2016; Wierckx et al., 2014).

38. A systematic review of 20 studies showed improved quality of life, decreased depression, and decreased anxiety with hormonal treatment in transgender people. (Baker, et al., 2021). Another systematic review showed improvement in mental health and quality of life measures in transgender people with hormonal treatment (White Hughto and Reisner, 2016). In the United Kingdom, one study demonstrated that depression and anxiety were substantially reduced over 18 months of gender-affirming hormonal treatment. (Aldridge, et al., 2020). In a secondary analysis of data from the US Transgender Survey, having had genital surgery was associated with decreased psychological distress and suicidal ideation. (Almazan, et al., 2021). In transgender patients followed 4-6 years after surgery, satisfaction was very high (over 90%) and regret was low. (van de Grift et al., 2018). The Cornell “What We Know” systematic review of 55 studies from 1991-2017 strongly supported that gender-affirming hormone and surgical treatment improved the well-being of transgender individuals. (What We Know, 2018).

39. The studies on gender-affirming medical care for treatment of dysphoria are consistent with decades of clinical experience of mental health providers across the U.S. and around the world. At professional conferences and other settings in which I interact with colleagues, clinicians report that gender-affirming medical care, for those for whom it is indicated, provides great clinical benefit. In my 30 years of clinical experience treating gender dysphoric patients, I have seen the benefits of gender-affirming medical care on my patients’ health and well-being. I have seen many patients show improvements in mental health, as well as in performance in school, in social functioning with peers, and in family relationships when they experience relief from gender dysphoria with gender-affirming medical care.

40. Accordingly, treatments for gender dysphoria are not considered elective or cosmetic. WPATH (2016) states, “The medical procedures attendant to gender

affirming/confirming surgeries are not ‘cosmetic’ or ‘elective’ or ‘for the mere convenience of the patient.’ These reconstructive procedures are not optional in any meaningful sense, but are understood to be medically necessary for the treatment of the diagnosed condition. In some cases, such surgery is the **only** effective treatment for the condition, and for some people genital surgery is essential and life-saving.”

41. As part of the treatment process for gender dysphoria, patients provide informed consent to their care. In addition, a treating doctor will not offer gender-affirming medical treatments unless they have concluded after weighing the risks and benefits of care that treatment is appropriate. The risks and benefits of care are discussed with the transgender patient, who must assent. This process is no different than the informed consent process for other treatments. However, for gender-affirming medical care, there is the additional safeguard of the assessment by a mental health professional, who, in addition to diagnosing gender dysphoria, also assesses capacity to consent and reviews the risks and benefits of treatment with the patient.

42. Regret among those who are treated with gender-affirming medical care is rare. For example, in one study in the Netherlands, none of the youth who received puberty blockers, hormones, and surgery, and followed over an 8-year period expressed regret. (DeVries, 2014.) Zucker, et al., (2010), summarizing key studies on regret for adolescents referred for surgery when they reached the age of majority in the Netherlands, states, “there was virtually no evidence of regret, suggesting that the intervention was effective.”

43. Regret rates for gender-affirming surgery in adults are also very low. A pooled review across multiple studies of 7,928 patients receiving gender-affirming surgery showed a regret rate of 1%. (Bustos, et al., 2021). Over 50 years of gender-affirming surgery in Sweden, the regret rate, as measured by legal gender change reversal, was 2%. (Dhejne, et al., 2014). These are

very low regret rates for surgery. For example, 47% of women expressed at least some regret after reconstructive breast surgery following mastectomy for breast cancer. (Sheehan, et al., 2008).

44. For all the reasons above, I am aware of no basis in medicine or science for West Virginia's categorical Exclusion of coverage for gender-affirming care.

45. One misperception is that hormone therapy is experimental because the U.S. Food and Drug Administration ("FDA") has not yet approved its use for the specific application of treating Gender Dysphoria. Medications very commonly are prescribed for off-label uses. Many gender-affirming hormone treatments were approved for treatment of other conditions and have been used for those conditions as well as for gender-affirming care for many years, supporting their safety and efficacy. The U.S. Department of Health and Human Services Agency for Healthcare Research and Quality states, "[Off-label prescribing] is legal and common. In fact, one in five prescriptions written today are for off-label use." See <https://www.ahrq.gov/patients-consumers/patient-involvement/off-label-drug-usage.html>.

46. Finally, the cost of providing gender-affirming care is generally very low, particularly in the context coverage through group health plans. To begin, transgender people constitute a small percentage of the overall population, approximately 0.5%. (Crissman, et. al., 2017). Furthermore, the fraction of the population receiving clinical care for Gender Dysphoria is much smaller, well under one in a thousand patients (Zhang, et al., 2020). As a result, one study estimated an average cost of \$0.016 cents per member per month to provide gender-affirming care. (Padula, et al., 2016). The authors conclude: "Health insurance coverage for the U.S. transgender population is affordable and cost-effective, and has a low budget impact on U.S. society." A study by Herman (2013) similarly found low costs to providing health coverage for gender affirming care. Additionally, when a form of treatment is covered for cisgender people under an insurance

plan, it is generally not disproportionately costly to cover the same treatment for transgender people simply because it is provided to treat gender dysphoria.

* * *

Interviews of the Plaintiffs

CONFIDENTIAL, continued

CONFIDENTIAL, continued

CONFIDENTIAL, continued

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I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and corrected.

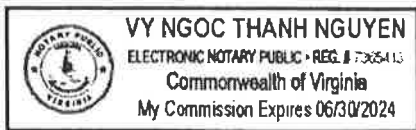
Executed this 13 day of January, 2022.



Dan H. Karasic, M.D.

Subscribed and sworn before me, a Notary Public in and for the FAIRFAX, State of
VIRGINIA, this 13 day of January, 2022.

SEAL



A handwritten signature in black ink, appearing to be "VN", written over a horizontal line.

Signature of Notary

1642105924-karasic-report413914-9

Final Audit Report

2022-01-14

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Exhibit A

**University of California, San Francisco
CURRICULUM VITAE**

Name: Dan H. Karasic, MD

Position: Professor Emeritus
Psychiatry
School of Medicine

Voice: 415-935-1511

Fax: 888-232-9336

EDUCATION

1978 - 1982	Occidental College, Los Angeles	A.B.; Summa Cum Laude	Biology
1982 - 1987	Yale University School of Medicine	M.D.	Medicine
1987 - 1988	University of California, Los Angeles	Intern	Medicine, Psychiatry, and Neurology
1988 - 1991	University of California, Los Angeles; Neuropsychiatric Institute	Resident	Psychiatry
1990 - 1991	University of California, Los Angeles; Department of Sociology	Postdoctoral Fellow	Training Program in Mental Health Services for Persons with AIDS

LICENSES, CERTIFICATION

1990	Medical Licensure, California, License Number G65105
1990	Drug Enforcement Administration Registration Number BK1765354
1993	American Board of Psychiatry and Neurology, Board Certified in Psychiatry

PRINCIPAL POSITIONS HELD

1991 - 1993	University of California, San Francisco	Health Sciences Psychiatry Clinical Instructor
1993 - 1999	University of California, San Francisco	Health Sciences Psychiatry Assistant Clinical Professor
1999 - 2005	University of California, San Francisco	Health Sciences Psychiatry

		Associate Clinical Professor	
2005 - present	University of California, San Francisco	Health Sciences Psychiatry Clinical Professor	

OTHER POSITIONS HELD CONCURRENTLY

1980 - 1980	Associated Western Universities / U.S. Department of Energy	Honors Undergraduate Research Fellow	UCLA Medicine
1981 - 1981	University of California, Los Angeles; Medicine American Heart Association, California Affiliate	Summer Student Research Fellow	UCLA
1986 - 1987	Yale University School of Medicine; American Heart Association, Connecticut Affiliate	Medical Student Research Fellow	Psychiatry
1990 - 1991	University of California, Los Angeles	Postdoctoral	Sociology Fellow
1991 - 2001	SFGH Consultation-Liaison Service; Attending AIDS Care	Psychiatrist	Psychiatry
1991 - 2001	AIDS Consultation-Liaison Medical Student Elective	Course Director	Psychiatry
1991 - present	UCSF Positive Health Program at San General Hospital (Ward 86)	HIV/AIDS Outpatient Psychiatrist	Psychiatry Francisco
1991 - present	UCSF AHP (AIDS Health Project/Alliance Health Project)	HIV/AIDS Outpatient Psychiatrist	Psychiatry
1994 - 2002	St. Mary's Medical Center CARE Unit. The CARE Unit specializes in the care of patients with AIDS dementia.	Consultant	Psychiatry
2001 - 2010	Depression and Antiretroviral Adherence Study (The H.O.M.E. study: Health Outcomes of Mood Enhancement)	Clinical Director	Psychiatry and Medicine
2003 - 2020	Transgender Life Care Program and Clinic, Castro Mission Health Center	Psychiatrist Clinic	Dimensions Dimensions
2013 - 2020	UCSF Alliance Health Project, Co-lead, Transgender Team	Co-Lead and Psychiatrist	Psychiatry

HONORS AND AWARDS

1981	Phi Beta Kappa Honor Society	Phi Beta Kappa
1990	NIMH Postdoctoral Fellowship in Mental Health Services for People with	National Institute of Mental Health

	AIDS (1990-1991)	
2001	Lesbian Gay Bisexual Transgender Leadership Award, LGBT Task Force of the Cultural Competence and Diversity Program	SFGH Department of Psychiatry
2006	Distinguished Fellow	American Psychiatric Association
2012	Chancellor's Award for Leadership in LGBT Health	UCSF

KEYWORDS/AREAS OF INTEREST

Psychiatry, HIV/AIDS, consultation-liaison, medication adherence, gay/lesbian, transgender, gender dysphoria, sexuality, homeless/marginally housed, mood disorders, teaching/supervision

CLINICAL ACTIVITIES SUMMARY

As psychiatrist for the Positive Health Practice at Ward 86, I evaluated and treated patients with psychiatric illness and HIV. I provide consultation to internists, fellows, and nurse practitioners on managing psychiatric illness in their patients. Clinical work includes attention to the needs of special populations, including working with a multidisciplinary team in a drop-in clinic for HIV-positive women, and addressing issues emerging in HIV and Hepatitis C co-infection. As psychiatrist at the UCSF Alliance Health Project, I evaluated and treated patients and I am co-chair of the Gender Team, which provides assessment and care for transgender patients. As psychiatrist for the Transgender Life Care program and Dimensions Clinic, I evaluate and treat transgender patients, working with a multidisciplinary team at Castro Mission Health Center. In my faculty practice, I treated transgender, gender dysphoric, and HIV-positive patients referred from providers across Northern California, and I provide consultation on challenging cases to psychologists and other psychotherapists working with transgender and gender dysphoric patients.

MEMBERSHIPS

- 1992 - present Northern California Psychiatric Society
- 1992 - present American Psychiatric Association
- 2000 - 2019 Bay Area Gender Associates (an organization of psychotherapists working with transgendered clients)
- 2001 - present World Professional Association for Transgender Health

SERVICE TO PROFESSIONAL ORGANIZATIONS

1981 - 1982	The Occidental	News Editor
1984 - 1985	Yale University School of Medicine	Class President
1989 - 1991	Kaposi's Sarcoma Group, AIDS Project Los Angeles	Volunteer Facilitator
1992 - 1996	Early Career Psychiatrist Committee, Association of Gay and Lesbian Psychiatrists	
1992 - 1996	Board of Directors, Association of Gay and Lesbian Psychiatrists	Member

1993 - 1993	Local Arrangements Committee, Association of Gay and Psychiatrists	Chair Lesbian
1994 - 1995	Educational Program, Association of Gay and Lesbian 1995 Annual Meeting	Director Psychiatrists,
1994 - 1998	Board of Directors, BAY Positives	Member
1994 - present	Committee on Lesbian, Gay, Bisexual and Transgender Issues, Northern California Psychiatric Society	Member
1995 - 1997	Board of Directors, Bay Area Young Positives. BAY Positives is the nation's first community-based organization providing psychosocial and recreational services to HIV-positive youth	President
1995 - 1997	Executive Committee, Bay Area Young Positives.	Chair
1996 - 2004	Committee on Lesbian, Gay, Bisexual and Transgender Issues, Northern California Psychiatric Society	Chair
1998 - 2002	City of San Francisco Human Rights Commission, Lesbian, Gay Bisexual Transgender Advisory Committee	Member
2000 - 2004	Association of Gay and Lesbian Psychiatrists. for the organization's educational programs	Vice President Responsible
2004 - 2005	Association of Gay and Lesbian Psychiatrists	President-elect
2005 - 2007	Caucus of Lesbian, Gay, and Bisexual Psychiatrists of the American Psychiatric Association	Chair
2005 - 2007	Association of Gay and Lesbian Psychiatrists	President
2007 - 2009	Association of Gay and Lesbian Psychiatrists	Immediate Past President
2009 - 2010	Consensus Committee for Revision of the Sexual and Gender Identity Disorders for DSM-V, GID of Adults subcommittee. (Wrote WPATH recommendations as advisory body to the APA DSM V Committee for the Sexual and Gender Identity Disorders chapter revision.)	Member
2010 - 2011	Scientific Committee, 2011 WPATH Biennial Symposium,	Member Atlanta
2010 -2022	World Professional Association for Transgender Care Standards of Care Workgroup and Committee (writing seventh and eighth revisions of the WPATH Standards of Care, which is used internationally for transgender care.)	Member
2010 - 2018	ICD 11 Advisory Committee, World Professional Association for Transgender Health	Member
2012 - 2014	Psychiatry and Diagnosis Track Co-chair, Scientific 2014 WPATH Biennial Symposium, Bangkok	Member Committee,
2014 - 2016	Scientific Committee, 2016 WPATH Biennial Symposium,	Member Amsterdam

2014 - 2018	Board of Directors (elected to 4 year term), World Professional Association for Transgender Health	Member
2014 - 2018	Public Policy Committee, World Professional Association for Transgender Health	Chair for
2014 - 2018	WPATH Global Education Initiative: Training providers and specialty certification in transgender health	Trainer and Steering Committee Member
2014 - 2016	American Psychiatric Association Workgroup on Gender	Member Dysphoria
2016 - present	American Psychiatric Association Workgroup on Gender	Chair Dysphoria
2016	USPATH: Inaugural WPATH U.S. Conference, Los Angeles, 2017	Conference Chair

SERVICE TO PROFESSIONAL PUBLICATIONS

- 2011 - present Journal of Sexual Medicine, reviewer
- 2014 - present International Journal of Transgenderism, reviewer
- 2016 - present LGBT Health, reviewer

INVITED PRESENTATIONS - INTERNATIONAL

2009	World Professional Association for Transgender Health, Oslo, Norway	Plenary Session Speaker
2009	World Professional Association for Transgender Health, Oslo, Norway	Symposium Speaker
2009	Karolinska Institutet, Stockholm Sweden	Invited Lecturer
2012	Cuban National Center for Sex Education (CENESEX), Havana, Cuba	Invited Speaker
2013	Swedish Gender Clinics Annual Meeting, Stockholm, Sweden	Keynote Speaker
2013	Conference on International Issues in Transgender care, United Nations Development Programme - The Lancet, Beijing, China	Expert Consultant
2014	World Professional Association for Transgender Health, Bangkok, Thailand	Track Chair
2014	World Professional Association for Transgender Health, Bangkok, Thailand	Invited Speaker
2014	World Professional Association for Transgender Health, Bangkok, Thailand	Invited Speaker
2015	European Professional Association for Transgender Health, Ghent, Belgium	Invited Speaker
2015	European Professional Association for Transgender Health, Ghent, Belgium	Symposium Chair

2015	Israeli Center for Human Sexuality and Gender Identity, Aviv	Invited Speaker Tel Aviv
2016	World Professional Association for Transgender Health, Amsterdam	Symposium Chair
2016	World Professional Association for Transgender Health, Amsterdam	Invited Speaker
2016	World Professional Association for Transgender Health, Amsterdam	Invited Speaker
2017	Brazil Professional Association for Transgender Health, Paulo	Sao Paulo
2017	Vietnam- United Nations Development Programme Asia Transgender Health Conference, Hanoi	
2018	United Nations Development Programme Asia Conference on Transgender Health and Human Rights, Bangkok	
2018	World Professional Association for Transgender Health, Buenos Aires	Invited Speaker
2021	Manitoba Psychiatric Association, Keynote Speaker	

INVITED PRESENTATIONS - NATIONAL

1990	Being Alive Medical Update, Century Cable Television	Televised Lecturer
1992	Institute on Hospital and Community Psychiatry, Toronto	Symposium Speaker
1992	Academy of Psychosomatic Medicine Annual Meeting, San Diego	Symposium Speaker
1994	American Psychiatric Association 150th Annual Meeting, Philadelphia	Workshop Chair
1994	American Psychiatric Association 150th Annual Meeting, Philadelphia	Workshop Speaker
1994	American Psychiatric Association 150th Annual Meeting, Philadelphia	Paper Session Co-chair
1995	Spring Meeting of the Association of Gay and Lesbian Psychiatrists, Miami Beach	Symposium Chair
1996	American Psychiatric Association 152nd Annual Meeting, New York	Workshop Speaker
1997	American Psychiatric Association Annual Meeting, San Diego	Workshop Speaker
1997	Gay and Lesbian Medical Association Annual	Invited Speaker Symposium
1998	American Psychiatric Association Annual Meeting,	Workshop Chair

	Toronto	
1998	American Psychiatric Association Annual Meeting, Toronto	Workshop Chair
1998	American Psychiatric Association Annual Meeting, Toronto	Media Session Chair
1998	American Psychiatric Association Annual Meeting, Toronto	Media Session Chair
1999	American Psychiatric Association Annual Meeting, Washington, D.C.	Symposium Chair
1999	American Psychiatric Association Annual Meeting, Washington, D.C.	Symposium Presenter
1999	American Psychiatric Association Annual Meeting, Washington, D.C.	Workshop Chair
2000	American Psychiatric Association Annual Meeting, Chicago	Workshop Chair
2000	National Youth Leadership Forum On Medicine, University of California, Berkeley	Invited Speaker
2001	American Psychiatric Association Annual Meeting, New Orleans	Workshop Chair
2001	American Psychiatric Association Annual Meeting, New Orleans	Media Program Chair
2001	Association of Gay and Lesbian Psychiatrists Symposium, New Orleans	Chair
2001	Harry Benjamin International Gender Dysphoria Association Biennial Meeting, Galveston, Texas	Invited Speaker
2002	American Psychiatric Association Annual Meeting, Philadelphia	Media Program Chair
2002	American Psychiatric Association Annual Meeting, Philadelphia	Workshop Chair
2002	American Psychiatric Association Annual Meeting, Philadelphia	Workshop Chair
2003	Association of Gay and Lesbian Psychiatrists CME	Chair Conference
2003	American Psychiatric Association Annual Meeting, San Francisco	Symposium Chair
2003	American Psychiatric Association Annual Meeting, San Francisco	Symposium Co-Chair
2003	American Psychiatric Association Annual Meeting, San Francisco	Workshop Chair

2003	American Public Health Association Annual Meeting, San Francisco	Invited Speaker
2004	Mission Mental Health Clinic Clinical Conference	Invited Speaker
2004	Association of Gay and Lesbian Psychiatrists Conference, New York	Co-Chair
2004	Mental Health Care Provider Education Program: Los Angeles. Sponsored by the American Psychiatric Association Office of HIV Psychiatry	Invited Speaker
2005	American Psychiatric Association Annual Meeting, Atlanta	Workshop Speaker
2005	Association of Gay and Lesbian Psychiatrists Saturday Symposium	Invited Speaker
2008	Society for the Study of Psychiatry and Culture, San Francisco	Invited Speaker
2009	American Psychiatric Association Annual Meeting, San Francisco	Symposium Speaker
2011	National Transgender Health Summit, San Francisco	Invited Speaker
2011	National Transgender Health Summit, San Francisco	Invited Speaker
2011	American Psychiatric Association Annual Meeting, Honolulu, HI	Symposium Chair
2011	American Psychiatric Association Annual Meeting, Honolulu, HI	Symposium Speaker
2011	World Professional Association for Transgender Health Biennial Conference, Atlanta, GA	Invited Speaker
2011	World Professional Association for Transgender Health Biennial Conference, Atlanta, GA	Invited Speaker

		Invited Speaker
2011	World Professional Association for Transgender Health Biennial Conference, Atlanta, GA	
2011	Institute on Psychiatric Services, San Francisco	Invited Speaker
2012	Gay and Lesbian Medical Association Annual Meeting	Invited Speaker
2013	National Transgender Health Summit, Oakland, CA	Invited Speaker
2013	National Transgender Health Summit, Oakland, CA	Invited Speaker
2013	National Transgender Health Summit, Oakland, CA	Invited Speaker
2013	American Psychiatric Association Annual Meeting, San Francisco	Invited Speaker
2013	Gay and Lesbian Medical Association, Denver, CO	Invited Speaker
2014	American Psychiatric Association Annual Meeting, New York	Invited Speaker
2014	Institute on Psychiatric Services, San Francisco	Moderator
2014	Institute on Psychiatric Services, San Francisco	Invited Speaker
2014	Institute on Psychiatric Services, San Francisco	Invited Speaker
2015	National Transgender Health Summit, Oakland, CA	Invited Speaker
2015	National Transgender Health Summit, Oakland, CA	Invited Speaker
2015	American Psychiatric Association Annual Meeting, Toronto	Workshop Speaker
2015	American Psychiatric Association Annual Meeting, Toronto	Course Faculty
2016	American Psychiatric Association Annual Meeting	Course Faculty
2016	World Professional Association for Transgender Health Global Education Initiative, Atlanta	Course Faculty
2016	World Professional Association for Transgender Health Global Education Initiative, Springfield, MO	Course Faculty
2016	World Professional Association for Transgender Health Global Education Initiative, Fort Lauderdale, FL	Course Faculty
2017	World Professional Association for Transgender Health, GEI, Los Angeles	Course Faculty
	World Professional Association for Transgender Health	

Surgeon's Training, Irvine, CA Course Faculty

- 2017 American Urological Association Annual Meeting, San Francisco CA
Invited Speaker
- 2018 World Professional Association for Transgender Health GEI, Portland OR,
Course Faculty
- 2018 World Professional Association for Transgender Health GEI, Palm Springs,
Course Faculty
- 2019 American Society for Adolescent Psychiatry Annual Meeting, San Francisco,
Speaker
- 2019 American Psychiatric Association Annual Meeting, San Francisco, Session
Chair
- 2020 Psychiatric Congress, Invited Speaker

INVITED PRESENTATIONS - REGIONAL AND OTHER INVITED PRESENTATIONS

- 1990 Advanced Group Therapy Seminar, UCLA Invited Lecturer
Neuropsychiatric Institute
- 1991 Joint Project of the Southern California AIDS Interfaith Symposium
Council and UCLA School of Medicine Speaker
- 1991 Joint Project of the Southern California AIDS Interfaith Workshop Panelist
Council and UCLA School of Medicine
- 1992 Advanced Group Therapy Seminar, UCLA Invited Lecturer
Neuropsychiatric Institute
- 1993 UCSF School of Nursing Invited Lecturer
- 1995 UCSF/SFGH Department of Medicine Clinical Care Invited Speaker
Conference
- 1996 UCSF School of Nursing Invited Speaker
- 1996 Psychopharmacology for the Primary Care AIDS/Clinician, Invited Lecturer
series of four lectures, UCSF Department of Medicine
- 1996 UCSF AIDS Health Project Psychotherapy Internship
Training Program
- 1996 UCSF/SFGH Department of Medicine AIDS Quarterly Invited Speaker
Update

1996	San Francisco General Hospital, Division of Addiction Medicine	Invited Speaker Invited Speaker
1996	UCSF Langley Porter Psychiatric Hospital and Clinics	Invited Speaker Grand Rounds
1997	UCSF School of Nursing	Invited Speaker
1997	UCSF Department of Medicine AIDS Program	Invited Speaker
1997	Northern California Psychiatric Society Annual Meeting, Monterey	Workshop Speaker
1997	San Francisco General Hospital Department of Psychiatry	Invited Speaker Grand Rounds
1997	San Francisco General Hospital Department of Psychiatry	Invited Speaker Grand Rounds
1997	Northern California Psychiatric Society LGBT Committee	Chair Fall Symposium
1997	Progress Foundation, San Francisco	Invited Speaker
1998	San Francisco General Hospital Department of Psychiatry	Invited Speaker Grand Rounds
1999	Northern California Psychiatric Society Annual Meeting, Santa Rosa	Invited Speaker
1999	Northern California Psychiatric Society Annual Meeting, Santa Rosa	Invited Speaker
1999	University of California, Davis, Department of Psychiatry	Invited Speaker Grand Rounds
1999	California Pacific Medical Center Department of Psychiatry	Invited Speaker Psychiatry Grand Rounds
1999	San Francisco General Hospital Department of Psychiatry	Discussant Departmental Case Conference
2000	Langley Porter Psychiatric Hospital and Clinics	Invited Speaker Consultation Liaison Seminar
2000	San Francisco General Hospital, Psychopharmacology	Invited Speaker Seminar
2000	UCSF Transgender Health Conference, Laurel Heights	Invited Speaker Conference Center
2000	Psychiatry Course for UCSF Second Year Medical Students	Invited Lecturer
2000	Community Consortium Treatment Update Symposium, California Pacific Medical Center, Davies Campus	Invited Speaker

2000	San Francisco General Hospital Department of Psychiatry Grand Rounds	Invited Speaker
2001	Psychiatry Course for UCSF Second Year Medical Students	Invited Lecturer
2003	Tom Waddell Health Center Inservice	Invited Speaker
2003	San Francisco Veterans Affairs Outpatient Clinic	Invited Speaker
2004	San Francisco General Hospital Psychiatric Emergency Service Clinical Conference	Invited Speaker
2004	South of Market Mental Health Clinic, San Francisco	Invited Speaker
2005	Northern Psychiatric Society Annual Meeting	Invited Speaker
2005	Equality and Parity: A Statewide Action for Transgender Prevention and Care, San Francisco	Invited Speaker HIV
2005	San Francisco General Hospital Department of Psychiatry Grand Rounds.	Invited Speaker
2006	SFGH/UCSF Department of Psychiatry Grand Rounds	Invited Speaker
2007	UCSF Department of Medicine, HIV/AIDS Grand Rounds, Positive Health Program	Invited Speaker
2007	California Pacific Medical Center LGBT Health San Francisco LGBT Community Center	Invited Speaker Symposium,
2007	UCSF CME Conference, Medical Management of HIV/AIDS, Fairmont Hotel, San Francisco	Invited Speaker
2008	UCSF Department of Medicine, Positive Health Program, HIV/AIDS Grand Rounds	Invited Speaker
2008	San Francisco General Hospital Psychiatry Grand Rounds	Invited Speaker
2008	UCSF CME Conference, Medical Management of HIV/AIDS, Fairmont Hotel, San Francisco	Invited Speaker
2010	Northern California Psychiatric Society Annual Meeting, Monterey, CA	Invited Speaker
2011	Transgender Mental Health Care Across the Life Span, Stanford University	Invited Speaker
2011	San Francisco General Hospital Department of Psychiatry Grand Rounds	Invited Speaker
2012	UCSF AIDS Health Project Veterans Affairs Medical Center.	Invited Speaker 2012 San Francisco
2013	Association of Family and Conciliation Courts Conference, Los Angeles, CA	Invited Speaker
2014	UCSF Transgender Health elective	Invited Speaker
2014	UCSF Department of Psychiatry Grand Rounds	Invited Speaker

2014	California Pacific Medical Center Department of Grand Rounds	Invited Speaker Invited Speaker Psychaitry
2014	UCLA Semel Institute Department of Psychiatry Grand Rounds	Invited Speaker
2015	UCSF Transgender Health elective	Invited Speaker
2015	Fenway Health Center Boston, MA (webinar)	Invited Speaker
2015	Transgender Health Symposium, Palm Springs	Invited Speaker
2015	Transgender Health Symposium, Palm Springs	Co-Chair
2015	Santa Clara Valley Medical Center Grand Rounds	Invited Speaker
2016	UCSF School of Medicine Transgender Health elective	Invited Speaker
2016	Langley Porter Psychiatric Institute APC Case Conference	Invited Speaker (2 session series)
2016	Zuckerberg San Francisco General Department of Psychiatry Grand Rounds	Invited Speaker
2016	UCSF Mini-Medical School Lectures to the Public	Invited Speaker
2021	Los Angeles County Department of Mental Health,	Invited Speaker

CONTINUING EDUCATION AND PROFESSIONAL DEVELOPMENT ACTIVITIES

2005	Northern California Psychiatric Society
2005	Northern California Psychiatric Society Annual Meeting, Napa
2005	Association of Gay and Lesbian Psychiatrist Annual Conference
2006	Annual Meeting, American Psychiatric Association, Atlanta
2006	Annual Meeting, American Psychiatric Association, Toronto
2006	Institute on Psychiatric Services, New York
2007	Association of Gay and Lesbian Psychiatrists Annual Conference
2007	American Psychiatric Association Annual Meeting, San Diego
2007	The Medical Management of HIV/AIDS, a UCSF CME Conference
2008	Society for the Study of Psychiatry and Culture, San Francisco
2009	American Psychiatric Association, San Francisco
2009	World Professional Association for Transgender Health, Oslo, Norway
2010	Annual Meeting of the Northern California Psychiatric Society, Monterey, CA

- 2011 Transgender Mental Health Care Across the Life Span, Stanford University
- 2011 National Transgender Health Summit, San Francisco
- 2011 American Psychiatric Association Annual Meeting, Honolulu, HI
- 2011 World Professional Association for Transgender Health Biennial Conference, Atlanta, GA
- 2011 Institute on Psychiatric Services, San Francisco
- 2012 Gay and Lesbian Medical Association Annual Meeting, San Francisco
- 2013 National Transgender Health Summit, Oakland, CA
- 2013 American Psychiatric Association Annual Meeting, San Francisco
- 2013 Gay and Lesbian Medical Association, Denver, CO
- 2014 American Psychiatric Association Annual Meeting, New York
- 2014 Institute on Psychiatric Services, San Francisco
- 2015 European Professional Association for Transgender Health, Ghent, Belgium
- 2015 National Transgender Health Summit, Oakland
- 2015 American Psychiatric Association Annual Meeting, Toronto
- 2016 American Psychiatric Association Annual Meeting, Atlanta
- 2016 World Professional Association for Transgender Health, Amsterdam

GOVERNMENT AND OTHER PROFESSIONAL SERVICE

1998 - 2002 City and County of San Francisco Human Rights Member Commission LGBT Advisory Committee

SERVICE ACTIVITIES SUMMARY

My current service work focuses on developing transgender care at UCSF, nationally, and internationally.

I worked with urologist Maurice Garcia, MD on developing protocols as well as outcome measures for the UCSF Transgender Surgery Program at UCSF Medical Center. I am on the Medical Advisory Board of the UCSF Center of Excellence for Transgender Care, and have cowritten the mental health section of the original Primary Care Protocols and the new revision. I have chaired the Mental Health Track of UCSF's National Transgender Health Summit since its inception in 2011. I am a founder and co-chair of the Gender Team at the UCSF Alliance Health Project. I helped develop, and participated as a trainer, in the San Francisco

Department of Public Health provider training program for care of transgender patients and for mental health assessments for surgery, and have worked in program development for the SFDPH Transgender Health Services surgery program.

I am the chair of the American Psychiatric Association Workgroup on Gender Dysphoria, which developed a CME course for the 2015 and 2016 APA Annual Meetings, and is now embarking on a larger educational mission to train American psychiatrists to better care for transgender patients. I have been leading education efforts in transgender health at APA meetings since 1998. On the APA Workgroup on Gender Dysphoria, I am a co-author of a paper of transgender issues that has been approved by the American Psychiatric Association as a resource document and is in press for the American Journal of Psychiatry. I am also the sole author of the chapter on transgender care in the American Psychiatric Press's Clinical Manual of Cultural Psychiatry, Second Edition.

I have been active internationally in transgender health through my work as a member of the Board of Directors of the World Professional Association for Transgender Health. I am an author of the WPATH Standards of Care, Version 7, and am Chapter Lead for the Mental Health Chapter of SOC 8.

I chaired the WPATH Public Policy Committee and was a member of the Global Education Initiative, which developed a specialty certification program in transgender health. I helped plan the 2016 WPATH Amsterdam conference, and was on the scientific committee for the last four biennial international conferences. I was on the founding committee of USPATH, the national affiliate of WPATH, and I chaired the inaugural USPATH conference, in Los Angeles in 2017. As a member of the steering committee of the WPATH Global Educational Initiative, I helped train over 2000 health providers in transgender health, and helped develop a board certification program and examination in transgender health.

UNIVERSITY SERVICE UC SYSTEM AND MULTI-CAMPUS SERVICE

1991 - present	HIV/AIDS Task Force	Member
1992 - 1993	HIV Research Group	Member
1992 - 1997	Space Committee	Member
1992 - present	Gay, Lesbian and Bisexual Issues Task Force	Member
1994 - 1997	SFGH Residency Training Committee	Member
1996 - 1997	Domestic Partners Benefits Subcommittee.	Chair
1996 - 2000	Chancellor's Advisory Committee on Gay, Lesbian, and Transgender Issues.	Member Bisexual
1996 - 2003	HIV/AIDS Task Force	Co-Chair
1996 - 2003	Cultural Competence and Diversity Program	Member
2009 - present	Medical Advisory Board, UCSF Center of Excellence for Transgender Health	Member
2010 - present	Steering Committee, Child Adolescent Gender Center	Member
2011 - present	Mental Health Track, National Transgender Health Summit	Chair

DEPARTMENTAL SERVICE

1991 - present San Francisco General Hospital, Department of Psychiatry, Member HIV/AIDS Task Force

- 1992 - 1993 San Francisco General Hospital, Department of Psychiatry, Member HIV Research Group
- 1992 - 1997 San Francisco General Hospital, Department of Psychiatry, Member Space Committee
- 1992 - 2003 San Francisco General Hospital, Department of Psychiatry, Member GLBT Issues Task Force
- 1994 - 1997 San Francisco General Hospital, Department of Psychiatry, Member Residency Training Committee
- 1996 - 2003 San Francisco General Hospital, Department of Psychiatry, Member Cultural Competence and Diversity Program
- 1996 - 2003 San Francisco General Hospital, Department of Psychiatry, Co-Chair HIV/AIDS Task Force
- 2012 - 2020 San Francisco Department of Public Health Gender Member Competence Trainings Committee
- 2013 - 2020 San Francisco Department of Public Health Transgender Member Health Implementation Task Force
- 2014 - 2020 San Francisco General Hospital, Department of Psychiatry, Member Transgender Surgery Planning Workgroup

PEER REVIEWED PUBLICATIONS

1. Berliner JA, Frank HJL, **Karasic D**, Capdeville M. Lipoprotein-induced insulin resistance in aortic endothelium. *Diabetes*. 1984; 33:1039-44.
2. Bradberry CW, **Karasic DH**, Deutch AY, Roth RH. Regionally-specific alterations in mesotelencephalic dopamine synthesis in diabetic rats: association with precursor tyrosine. *Journal of Neural Transmission. General Section*, 1989; 78:221-9.
3. Targ EF, **Karasic DH**, Bystritsky A, Diefenbach PN, Anderson DA, Fawzy FI. Structured group therapy and fluoxetine to treat depression in HIV-positive persons. *Psychosomatics*. 1994; 35:132-7.
4. Karasic DH. Homophobia and self-destructive behaviors. *The Northern California Psychiatric Physician*. 1996; 37 Nov.-Dec. Reprinted by the Washington State Psychiatric Society and the Southern California Psychiatric Society newsletters.
5. Karasic D. Anxiety and anxiety disorders. *Focus*. 1996 Nov; 11(12):5-6. PMID: 12206111
6. Polansky JS, **Karasic DH**, Speier PL, Hastik KL, Haller E. Homophobia: Therapeutic and training considerations for psychiatry. *Journal of the Gay and Lesbian Medical Association*. 1997 1(1) 41-47.
7. Karasic DH. Progress in health care for transgendered people. Editorial. *Journal of the Gay and Lesbian Medical Association*, 4(4) 2000 157-8.
8. Perry S, **Karasic D**. Depression, adherence to HAART, and survival. *Focus: A Guide to AIDS Research and Counseling*. 2002 17(9) 5-6.

9. Fraser L, **Karasic DH**, Meyer WJ, Wylie, K. Recommendations for Revision of the DSM Diagnosis of Gender Identity Disorder in Adults. *International Journal of Transgenderism*. Volume 12, Issue 2. 2010, Pages 80-85.
10. Coleman, E., Bockting, W., Botzer, M., Cohen-Kettenis, P., DeCuypere, G., Feldman, J., Fraser, L., Green, J., Knudson, G., Meyer, W., Monstrey, S., **Karasic D** and 22 others. (2011). Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People, 7th Version. *International Journal of Transgenderism*, 13:165-232, 2011
11. Tsai AC, **Karasic DH**, et al. Directly Observed Antidepressant Medication Treatment and HIV Outcomes Among Homeless and Marginally Housed HIV-Positive Adults: A Randomized Controlled Trial. *American Journal of Public Health*. February 2013, Vol. 103, No. 2, pp. 308-315.
12. Tsai AC, Mimmiaga MJ, Dilley JW, Hammer GP, **Karasic DH**, Charlebois ED, Sorenson JL, Safren SA, Bangsberg DR. Does Effective Depression Treatment Alone Reduce Secondary HIV Transmission Risk? Equivocal Findings from a Randomized Controlled Trial. *AIDS and Behavior*, October 2013, Volume 17, Issue 8, pp 2765-2772.
13. **Karasic DH**. Protecting Transgender Rights Promotes Transgender Health. *LGBT Health*. 2016 Aug; 3(4):245-7. PMID: 27458863
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EXPERT WITNESS AND CONSULTATION ON TRANSGENDER CARE AND RIGHTS

2008 Consultant, California Department of State Hospitals

2012 Dugan v. Lake, Logan UT

2012 XY v. Ontario <http://www.canlii.org/en/on/onhrt/doc/2012/2012hrto726/2012hrto726.html>

2014 Cabading v California Baptist University

2014 CF v. Alberta

<http://www.canlii.org/en/ab/abqb/doc/2014/2014abqb237/2014abqb237.html>

2017 United Nations Development Programme consultant, transgender health care and legal rights in the Republic of Vietnam; Hanoi.

2017- Forsberg v Saskatchewan; Saskatchewan Human Rights v Saskatchewan

2018 <https://canliiconnects.org/en/summaries/54130>

<https://canliiconnects.org/en/cases/2018skqb159>

2018 United Nations Development Programme consultant, transgender legal rights in Southeast Asia; Bangkok.

2018 Consultant, California Department of State Hospitals

2019, 2021 Consultant/Expert, Disability Rights Washington

2019, 2021 Consultant/Expert, ACLU Washington

2021 Consultant, California Department of Corrections and Rehabilitation

2021 Expert, *Kadel v. Folwell*, 1:19-cv-00272 (M.D.N.C.).

2021 Expert, *Drew Glass v. City of Forest Park* - Case No. 1:20-cv-914 (Southern District Ohio)

2021-2022 Expert, *Brandt et al v. Rutledge et al.* 4:21-cv-00450 (E.D. Ark.)

Exhibit B

EXHIBIT B – DAN KARASIC BIBLIOGRAPHY

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First Amended Class Action Complaint, *Fain v. Crouch*, Case No. 3:20-cv-00740 (S.D.W.V.)

Health plan booklets for plans offered through the West Virginia Public Employees Insurance Agency and the West Virginia Bureau for Medicaid Services

Medical records of Plaintiffs Christopher Fain, Shauntae Anderson, and Leanne James

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

CHRISTOPHER FAIN, *et al.*,
individually and on behalf of all others
similarly situated,

Plaintiffs,

v.

WILLIAM CROUCH, *et al.*,

Defendants.

CIVIL ACTION NO. 3:20-cv-00740
HON. ROBERT C. CHAMBERS

CERTIFICATE OF SERVICE

I hereby certify that the EXPERT DISCLOSURE REPORT OF DAN H. KARASIC,
M.D. was served electronically on the 18th day of March, 2022 on the following counsel for
Defendants in the above-captioned case:

Lou Ann S. Cyrus (WVSB # 6558)
Roberta F. Green (WVSB #6598)
Caleb B. David (WVSB #12732)
Kimberly M. Bandy (WVSB #10081)
SHUMAN MCCUSKEY SLICER PLLC
P.O. Box 3953, Charleston, WV 25339
(304) 345-1400; (304) 343-1826 (fax)
lcyrus@shumanlaw.com
rgreen@shumanlaw.com
cdavid@shumanlaw.com
kbandy@shumanlaw.com

*Attorneys for Defendants William Crouch;
Cynthia Beane; and West Virginia
Department of Health and Human Resources,
Bureau for Medical Services*

Eric D. Salyers (WVSB #13042)
Perry W. Oxley (WVSB # 7211)
David E. Rich (WVSB #9141)
Christopher K. Weed (WVSB #13868)
OXLEY RICH SAMMONS, PLLC
P.O. Box 1704
517 9th Street, Suite 1000
Huntington, West Virginia 25718
Phone: (304) 522-1138
Fax: (304) 522-9528
poxley@oxleylawwv.com
drich@oxleylawwv.com
esalyers@oxleylawwv.com
cweed@oxleylawwv.com

Attorneys for Defendant Jason Haught

Dated: March 18, 2022

Respectfully submitted,

s/ Walt Auvil

Walt Auvil, WV Bar No. 190
THE EMPLOYMENT LAW CENTER, PLLC
1208 Market Street
Parkersburg, WV 26101
Phone: 304-485-3058
Facsimile: 304-485-3058
auvil@theemploymentlawcenter.com

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

CHRISTOPHER FAIN, *et al.*,
individually and on behalf of all others
similarly situated,

Plaintiffs,

v.

WILLIAM CROUCH, *et al.*,

Defendants.

CIVIL ACTION NO. 3:20-cv-00740
HON. ROBERT C. CHAMBERS

EXPERT REBUTTAL REPORT OF DAN H. KARASIC, M.D.

1. I have been retained by counsel for plaintiffs as an expert in connection with the above-captioned litigation.
2. I previously submitted an expert witness report in this case (“Karasic Report”), which contains my background and credentials.
3. I have been asked by the Plaintiffs to respond to, rebut, and provide my expert opinion regarding the report by Dr. Stephen B. Levine (“Levine Report”). I do not address each and every assertion made in Dr. Levine’s report that I believe to be baseless, misleading, or mischaracterizations of the scientific literature, as there are many. Instead, my aim is to provide an explanation of the erroneous premises upon which his conclusions are based.
4. I have actual knowledge of the matters stated herein. If called to testify in this matter, I would testify truthfully and based on my expert opinions.

5. I reserve the right to supplement my opinions, if necessary, as the case proceeds. An updated bibliography with sources considered in forming the opinions below is attached as Exhibit A.

GENDER DYSPHORIA AND ITS TREATMENT

6. I previously explained in my original report the diagnostic criteria treatment and treatment standards for transgender adolescents and adults. (Karasic Report, ¶¶ 23-26). Because Dr. Levine's report focuses heavily on his concerns about treatment of pre-pubertal children, I briefly review the relevant diagnostic and treatment protocols for children before responding to his report specifically.

7. "Gender Dysphoria in Children" is a diagnosis applied only to pre-pubertal children, in the Diagnostic and Statistical Manual Fifth Edition (DSM-5), released in 2013. The criteria include "A: A marked incongruence between one's experienced/expressed gender and assigned gender, of at least 6 months' duration." The diagnosis also requires the presence of criterion A1, which is "A strong desire to be of the other gender or insistence that one is the other gender (or some alternative gender different from one's assigned gender." The prior version of the diagnosis, Gender Identity Disorder of Children, in DSM IV, did not require this A1 criterion of gender identity, and could be applied solely on the basis of gender atypical behavior. Most research on persistence and desistance of gender identity in pre-pubertal children was conducted in the era of DSM-IV and earlier versions, and applied a broader diagnosis that could be based only on gender atypical behavior alone, without necessarily a transgender identity.

8. No medical or surgical treatment for gender dysphoria is provided to pre-pubertal children. Adolescents may be treated with medications to delay the onset of puberty, which are also used in children without gender dysphoria, but with early onset of puberty. After ongoing

work with mental health professionals, adolescents may start treatment with hormones. Adults may start hormones after work with a therapist, or after assessment by a primary care provider or endocrinologist.

9. Mental health professionals, primary care providers, endocrinologists, and surgeons often work collaboratively, whether in multidisciplinary teams, or with communication between individual professional practices.

10. Affirming care for transgender children does not mean steering children in any particular direction, but rather supporting them through their period of exploration of gender expression and increasing self-awareness of their identity (Coleman, et al., 2012). For prepubescent children, no medical or surgical intervention is involved. Instead, interventions are directed at supporting the child with family, peers, and school.

11. Puberty blockers may be indicated at Tanner Stage 2 of puberty if the onset of physical changes of puberty is causing distress. Puberty blockers allow the child time to better understand their gender identity under the care of a mental health professional, while delaying distress from the progression of the development of secondary sex characteristics. These treatments are reversible, and if stopped the youth will undergo a normal puberty.

12. It is not until later in adolescence, when the adolescent and parents—in consultation with mental health professionals and pediatricians—have had time to ensure that change in gender identity is unlikely, that the adolescent may start cross-sex hormones, with the consent of parents and agreement of mental health and medical professionals.

13. Given that prior longitudinal studies included gender nonconforming children who were not transgender due to the broad criteria for the since-abandoned “gender identity disorder in children” diagnosis, these studies shed little light into questions of persistence and desistance of

gender dysphoria in pre-pubertal children. However, longitudinal studies show that gender dysphoria in adolescence usually persists (DeVries, et al., 2011). Additionally, no medical treatment, let alone irreversible medical and surgical interventions, is used prior to puberty, so the persistence and desistance statistics of pre-pubertal children do not inform the decision whether or not to initiate these treatments.

14. Data from the Dutch experience with evaluation and care by a multidisciplinary team, using puberty blockers, followed by hormones and surgery when indicated, show that this approach appears to result in high satisfaction, a lack of regret, and mental health outcomes similar to those of a control group that was not transgender. (DeVries, et al., 2014).

15. In an American prospective study of 104 transgender and nonbinary youth, treatment with puberty blockers or hormones was associated with 60% less moderate to severe depression and 73% less suicidal ideation over 12 months, compared to youth not treated. (Tordoff, et al. 2022).

16. In another United States study, treatment with gender affirming hormones in transgender youth was associated with a substantial reduction in body dissatisfaction, as well as improvement on mental health measures (Kuper, et al., 2020).

17. Denial of this appropriate care for transgender youth is also opposed by mainstream organizations responsible for the care of youth, including the American Academy of Pediatrics, the Academy of Child and Adolescent Psychiatry, and the Pediatric Endocrine Society.

18. Parental support and other social support have been associated with dramatically less suicidal ideation in transgender people, as has treatment with hormones and completing medical transition. (Bauer, et al., 2015). Provision of puberty blockers for transgender youth likewise decreases suicidality (Turban, et al., 2020). The American Academy of Child and

Adolescent Psychiatry states, “Research consistently demonstrates that gender diverse youth who are supported to live and/or explore the gender role that is consistent with their gender identity have better mental health outcomes than those who are not.” (AACAP, 2019).

19. Dr. Levine speculates that puberty-delaying treatment may lead to a series of negative health effects, in Section C of his report beginning at page 58. While other experts in this matter will respond to several of those arguments, I explain here why his claims about “psychosocial effects” and mental health issues are unfounded. Dr. Levine relies heavily on his own published opinion pieces, rather than on research to support his views. Dr. Levine does cite a paper on increased mental health symptoms in transgender youth compared to the general population. (Levine Report, ¶ 144; citing Reisner 2015), but that is not surprising given the ongoing stigma and discrimination that transgender people face, and Dr. Levine’s speculation about psychological harms of puberty blockers are unfounded. In fact, the use of puberty blockers has been associated with a substantial decrease in depression and suicidal ideation, when compared to those untreated (Tordoff, et al 2022).

20. Dr. Levine grossly misrepresents the process of assessment before medical and surgical interventions for transgender adolescents. Dr. Levine states, “Yet according to WPATH, perfunctory mental health assessments, which the draft SOC 8 describe as ‘brief assessment process,’ are sufficient to approve [medical and surgical interventions].” (Levine Report, ¶ 149). This is a fabrication by Dr. Levine, as the actual text of the SOC 8 Adolescent chapter draft says the opposite. The draft states that a “comprehensive assessment” is necessary. The SOC 8 draft describes the components of the comprehensive assessment in detail, and advises against more perfunctory assessments. Dr. Levine cites an anti-WPATH group’s editorial about SOC 8, rather

than the SOC 8 draft itself (Levine Report, ¶ 149 n.221), to draw conclusions that are diametrically opposed to what is stated in the SOC 8 Adolescent draft.

DR. LEVINE'S VIEWS ARE OUTSIDE THE MAINSTREAM

21. Dr. Levine's views as described in his report are outside the mainstream of experts in transgender health and mainstream medical organizations.

22. Dr. Levine was an editor of Standards of Care 5 ("SOC 5") of the Harry Benjamin Gender Dysphoria Association (the precursor to The World Professional Association of Transgender Health, "WPATH"), which were released in 1998. After widespread criticism of the SOC 5, it was replaced by the SOC 6 in just three years. By contrast, the SOC 6 (published in 2001) and SOC 7 (published in 2012) have each been used for approximately 10 years. Dr. Levine was critical of the changes in transgender care since 1998, and has been a critic of modern transgender care since. His involvement in transgender health in recent years has centered on the denial of care to transgender people. Dr. Levine's bias and misrepresentations were noted in *Norsworthy v. Beard*, in which U.S. District Judge Jon Tigar stated: "The Court gives very little weight to the opinions of Levine, whose report misrepresents the Standards of Care; overwhelmingly relies on generalizations about gender dysphoric prisoners, rather than an individualized assessment of Norsworthy; contains illogical inferences; and admittedly includes references to a fabricated anecdote."

23. Dr. Levine uses his prior experience with WPATH—over two decades ago—to burnish his credentials as an expert in transgender health, but otherwise dismisses WPATH as an "activist," rather than a professional, organization. Many WPATH members are academics who publish in peer-reviewed journals. Many are academic leaders in endocrinology, internal medicine, plastic surgery, urology, psychiatry, psychology, and other disciplines of the health

sciences. WPATH restricts its full membership to those with professional credentials and most members are licensed clinicians. The fact that WPATH engages in advocacy on behalf of its patient population for access to beneficial care is typical of medical associations. For example, the American Psychiatric Association advocates for a wide range of public policy changes to improve access to mental health care, e.g., for migrants and for incarcerated people.¹

24. Dr. Levine argues that dissenting views are not tolerated by myself and, in WPATH. (Levine Report, ¶ 69). I have attended several WPATH conferences since 2001, and have been a member of the Scientific Committees that have reviewed abstract submissions for the conferences, and the diversity of views presented and discussed have always been notable.

25. Dr. Levine's bias leads him to propound at length his own theories of etiology and treatment of gender dysphoria (which are unsupported by scientific peer-reviewed literature), while dismissing the approaches of modern mainstream medicine and pediatrics, as put forward in academic journals like *The Lancet*, the *American Journal of Psychiatry*, the *Journal of the American Medical Association*, and the *New England Journal of Medicine*, as well as by organizations including the American Medical Association, the American Psychiatric Association, the American Academy of Pediatrics, and the American Psychological Association. Dr. Levine's theories should be understood in the context of his own confirmation bias since, as described

¹ See American Psychiatric Association. (2019). Position Statement on the Care of Medically Vulnerable Migrants in the United States. *Available at* <https://www.psychiatry.org/File%20Library/About-APA/Organization-Documents-Policies/Policies/Position-Care-of-Medically-Vulnerable-Migrants-in-the-US.pdf>; American Psychiatric Association. (2016). Position Statement on Treatment of Substance Use Disorders in the Criminal Justice System. *Available at* <https://www.psychiatry.org/File%20Library/About-APA/Organization-Documents-Policies/Policies/Position-2016-Substance-Use-Disorders-in-the-Criminal-Justice-System.pdf>; see generally American Psychiatric Association Policy Finder, *available at* <https://www.psychiatry.org/home/policy-finder>.

below, he misinterprets the literature he cites and disregards the body of literature that contradicts his views.

26. Dr. Levine points to elevated rates of mental health problems in the transgender community, suggesting that being transgender is the cause of these negative outcomes and, thus, something doctors should try to prevent. (Levine Report, ¶¶ 34, 35). But being transgender is not something doctors can prevent. And these comments disregard the significant stigma transgender people continue to face, and stigma is a well-documented risk factor for mental health and substance use issues.

**DR. LEVINE’S ATTEMPTS TO DISCREDIT WPATH AND THE
STANDARDS OF CARE ARE BASELESS**

27. Dr. Levine makes a number of inaccurate assertions regarding the widely accepted standards of care for treatment of gender dysphoria, as set forth in the WPATH SOC. Contrary to Dr. Levine’s claims and as discussed in my initial report, the WPATH SOC “are endorsed and cited as *authoritative* by many professional medical associations including the American Medical Association, the American Academy of Pediatrics, the American Psychiatric Association, the American Psychological Association, the Endocrine Society, the Pediatric Endocrine Society, the American College of Obstetrics and Gynecology, the American College of Physicians, and the World Medical Association, among others.” (Karasic Report, ¶ 25).

28. Dr. Levine creates a straw man by providing a false description of care under the WPATH Standards of Care and then attacks it. He either misunderstands the prevailing protocols or assumes, without basis, that all or most providers disregard them. As a clinician who, unlike Dr. Levine, actively works with a multitude of clinicians providing care to transgender youth and

adults, I know firsthand that his characterization of treatment and care for transgender people is wholly inconsistent with the prevailing practice.

29. Dr. Levine erroneously states that a patient's diagnosis of gender dysphoria is "self-generated" and "merely recorded" by the provider. (Levine Report, ¶ 9). This is incorrect. The critical element of the gender dysphoria diagnosis is the presence of symptoms that meet the threshold for clinical impairment or distress. The diagnosis of gender dysphoria is codified in the DSM-5, which is published by the American Psychiatric Association, with attendant criteria. Psychiatrists and psychologists have many years of training to make diagnoses, which are made primary by clinical interview with the patient. This process is similar to that of diagnosing other DSM diagnoses, to determine treatment for other disorders. The process of taking a history of symptoms from a patient is not only used to determine most psychiatric treatment, but also many medical and pediatric treatments. Clinicians do not simply defer to the reported experiences of the patient, but instead use application of professional experience and expertise to assess whether the patient meets the relevant diagnostic criteria. It is surprising to hear any medical professional dismiss the importance of taking a good history from a patient. Even medical disorders that rely on blood tests and imaging for a definitive diagnosis rely first on taking a history to know which tests to order.

30. Dr. Levine also claims that WPATH has "downgraded the role of counseling or psychotherapy as a requirement" for gender-affirming care, and that there is "a crisis of inadequate or absent mental health assessments prior to" transition. (Levine Report, ¶ 75; page 67(D)). There is no requirement for psychotherapy before gender-affirming care because it may not be necessary for the patient, and requiring unnecessary care does not serve a therapeutic goal in medicine.

Rather than being a “downgrade,” this allows the flexibility for the provision of the best care to each individual.

31. Dr. Levine also attempts to suggest that the clinicians who help develop the SOC have a financial conflict of interest because they also work in the field. (Levine Report, ¶ 77). To clarify, those writing WPATH Standards of Care are not paid for their efforts. Additionally, clinical practice guidelines are written by those with expertise and experience in the field, and even Dr. Levine acknowledges that “clinicians” in the field should be involved. (Levine Report, ¶ 77). For example, clinical practice guidelines for psychiatrists working with people with eating disorders were written by psychiatrists who work in that field. It would make no sense for clinical practice guidelines for the care of transgender people to be written by those without experience doing that work. (American Psychiatric Association, 2006).

32. Dr. Levine also invokes a distinction between the diagnosis in the DSM-5, which requires either “clinically significant distress or impairment in social, occupational, or other important areas of functioning,” while the World Health Organization’s International Classification of Diseases, 11th Revision (“ICD 11”) refers to “gender incongruence.” (Levine Report, ¶ 86). The U.S. currently uses ICD-10-CM, the clinical modification of ICD-10 by the Centers for Medicaid & Medicare Services, for medical claim reporting. The ICD-10-CM diagnosis is linked to the Gender Dysphoria diagnosis in DSM-5. ICD-11 is being implemented in other parts of the world but is not expected to be implemented in the U.S. for several years.

33. Dr. Levine is incorrect when he states that the diagnosis is based on a “highly personal feeling” of incongruence “not subject to objective medical criteria.” (Levine Report, ¶ 86). As explained in both my original report and this report above, the diagnosis is performed by measuring the patient’s symptoms according to well-defined diagnostic criteria in the DSM-5.

While Dr. Levine invokes these arguments to claim that treatment for gender dysphoria cannot meet the definition of medically necessary care in the Medicaid program and state employee health plans (Levine Report, ¶ 85; *id.* at n.124), I have examined those definitions (which are typical of medical necessity definitions in many plans I have seen), and gender dysphoria satisfies those definitions.

34. Dr. Levine points to comments by Drs. Laura Edwards-Leeper and Erica Anderson claiming that patients are being “rushed” into treatment, and comments by WPATH President-Elect Dr. Marci Bowers discussing the role of dissent within WPATH. (Levine Report, ¶¶ 23, 146). But these doctors’ comments were aimed at improving care, not banning it. After making the comments cited by Dr. Levine, Dr. Bowers and Dr. Anderson were signatories to a letter from USPATH and WPATH supporting gender-affirming medical care for adolescents with gender dysphoria and opposing legislation aimed at banning care for transgender adolescents.² And Dr. Edwards-Leeper and Dr. Anderson similarly expressed their full support for gender-affirming care and “disgust” at legislative bans of such care.³ Ultimately, if there are individual doctors who deviate from the accepted protocols and inappropriately provide care that is harmful to patients, medical licensing boards can address that without denying care to those who have been appropriately assessed and determined to need it.

² United States Professional Association for Transgender Health and World Professional Association for Transgender Health. (2021). Joint Letter from USPATH and WPATH. *Available at* <https://www.wpath.org/media/cms/Documents/Public%20Policies/2021/Joint%20WPATH%20USPATH%20Letter%20Dated%20Oct%2012%202021.pdf>; *see also* World Professional Association for Transgender Health. WPATH Public Documents. *Available at* <https://www.wpath.org/policies>.

³ Laura Edwards-Leeper and Erica Anderson, the Mental Health Establishment is Failing Trans Kids, Washington Post, Nov. 24, 2021, *available at* <https://www.washingtonpost.com/outlook/2021/11/24/trans-kids-therapy-psychologist/>.

35. Dr. Levine cites my evaluations of the Plaintiffs in this case as an example of the supposed downgrading of mental health assessments under the Standards of Care. (Levine Report, ¶ 75). But clinical interviews with patients are typically used to diagnose other DSM diagnoses and determine treatment. This widely used assessment tool is not unique to gender dysphoria. Clinical interviews also are frequently conducted via telehealth platforms and recognized by the Standards of Care as an appropriate communication mode for a variety of reasons, including as part of a response to the global pandemic.

36. Dr. Levine asserts “[i]n my experience most current members of WPATH have little ongoing experience with the mentally ill.” (Levine Report, ¶ 74). I do not know what he is basing this on since he has not been involved with WPATH in two decades. But it is simply not true. I have been involved with WPATH for many years and have 35 years of experience treating people with mental illnesses. And there are many others like me in WPATH. Mental health providers make up the largest percentage of WPATH’s membership. These mental health professionals are licensed and regulated by state licensing boards, and most provide care to both cisgender and transgender clients—including those with serious mental illness. Having been actively involved for three decades as a UCSF professor in the training of psychiatry residents, internal medicine residents and fellows, and medical students, as well as of mental health and medical professionals at conferences around the nation, by my observation, the mainstream views of health professionals on transgender care include widespread acceptance of the WPATH Standards of Care.

37. As a clinician who, unlike Dr. Levine, actively works with a multitude of clinicians providing care to transgender youth and adults, I am acutely aware of the dedicated professionals who provide care to transgender people, like the care they provide to others, undertaking serious

endeavor in trying to provide the best care for their patients according to prevailing standards of care, not the pushing of a political agenda.

**GENDER-AFFIRMING MEDICAL CARE CAN HAVE
LONG-TERM BENEFITS FOR PATIENTS**

38. Dr. Levine claims that there is “no convincing evidence” that gender-affirming care results in “lasting improvements” to health and well-being. (Levine Report, ¶ 95). This is incorrect. Dr. Levine may not be convinced, but evidence of benefit has been presented. One large meta-analysis and listing of studies categorized into whether or not the study shows benefits is Cornell University’s “What We Know series, What does the scholarly research say about the effect of gender transition on transgender well-being?” which lists 51 studies published between 1991 and 2017 that have shown benefits from gender-affirming care. See <https://whatweknow.inequality.cornell.edu/topics/lgbt-equality/what-does-the-scholarly-research-say-about-the-well-being-of-transgender-people/> (finding “a robust international consensus in the peer-reviewed literature that gender transition, including medical treatments such as hormone therapy and surgeries, improves the overall well-being of transgender individuals”).

39. Dr. Levine’s claims also are inconsistent with my own decades-long clinical experience. I have treated people ranging from adolescents to the elderly. Many of my patients have remained with me for decades, e.g., where a patient is on medications that need to be monitored, and their medical transition was a positive health care decision not just in the short term but for the course of their lives.

40. Dr. Levine’s assertions based on anecdotal evidence that “regret” and “detransition” are starting to mount (Levine Report, ¶¶ 38, et seq.) is inconsistent with the data. A study of everyone receiving gender-affirming surgery in Sweden over 50 years (1960 to 2010)

found a regret rate of 2.2%, declining over the years. There were ten cases of regret from 1960 to 1980, and only five cases of regret total in the last 30 years that were reviewed, from 1981-2010. (Dhejne, et al., 2014). A meta-analysis of 27 studies which reported regret after gender-affirming surgery found that of 7928 people having gender-affirming surgery, the regret rate was 1%. (Bustos, et al., 2021). Dr. Levine dismisses this study, but one that he cites (Wiepjes, et al 2018) showed even lower regret rates—0.3%-0.6%. These regret rates are very low, especially in comparison to rates of regret for a number of surgical procedures that cisgender people undergo. For example, one study of women who had mastectomy for breast cancer, followed by breast reconstructive surgery, reported a 47% regret rate for having breast reconstruction (Sheehan, et al., 2008).

41. Dr. Levine's assertion is also at odds with my clinical experience. I have had some patients who halted their transition due to challenging personal circumstances—e.g., fear of losing family support—but they still had gender dysphoria. And some came back years later to resume their transition. But in 30 years, I have never seen a patient who had undergone hormone therapy and/or surgery and later came to identify with their sex assigned at birth and, thus, regretted the treatment and wanted to undo its effects.

42. Dr. Levine's assertions that successful transition for transgender individuals "is not biologically attainable" (Levine Report, ¶ 18) due to lack of reproductive capacity are untrue. Some transgender individuals retain reproductive capacity and have children. Transgender individuals may find other ways to build families, but so do other individuals who need medical assistance with reproduction or choose to adopt. Reproductive capacity is not what makes a person a man or a woman, and we do not describe others as less of a man or woman for needing assistance with family building or choosing not to raise children.

43. Apparently in support of the unattainable goal of trying to deter people from being transgender, Dr. Levine makes the wholly unsupported statement that transgender people are not attractive, are unable to form lasting relationships and attract sexual-romantic partners, are not loved by others, and do not have friends because people will not be comfortable interacting with them. (Levine Report, ¶¶ 140, 141, 142). That may be his own view of transgender people, but it is not at all consistent with clinical experience, including my own. Many transgender people, when appropriately treated, lead fulfilling lives, forming romantic relationships and having families, and having close relationships with friends and extended family.

DR. LEVINE'S MISREPRESENTATION OF THE SCIENTIFIC LITERATURE

44. Dr. Levine misrepresents the scientific literature regarding treatment for transgender people in at least three ways. First, he makes assertions that run contrary to a large body of literature, much of which he ignores. For example, Dr. Levine states that mainstream transgender care, including gender confirming surgery, lacks a “long-term demonstrated efficacy, and points to a growing risk of harm and regret.” (Levine Report, ¶ 15). In fact, transgender care, including gender confirming surgery, has been studied extensively, with much evidence of the effectiveness of such treatment, and of low regret rates. (Cornell “What We Know” systematic review; see also, e.g., Almazan and Keuroghlian, 2021; Colton-Meier, et al., 2011; Murad, et al., 2010; Smith, et al., 2005; Pfafflin & Junge, 1998).

45. Second, Dr. Levine cites a number of unscientific sources to support his opinions, including for example The Federalist, a conservative online magazine; a piece labeled “Opinion” in Newsweek; <https://genderreport.ca>, a non-scientific Canadian website; and pieces simply posted on a website, <https://segm.org/>.

46. Third, Dr. Levine mischaracterizes a number of the sources he cites. Dr. Levine discusses research by Cecelia Dhejne (2011) regarding suicidality in transgender people. These numbers were based on a total of 10 transgender people in 30 years (1973-2003) who committed suicide, versus 5 suicides in a control group of cisgender people. From 1987-2003, there was no statistically significant difference in suicide risk between transgender people and cisgender controls. The study was not designed to compare people who had gender affirming care with those who had not, and therefore no conclusions can be drawn from that study about the efficacy of gender-affirming care. (Levine Report, ¶ 109). In fact, the peer reviewed literature does show a reduction in suicidality after access to gender-affirming care (Almazan and Keuroghlian 2021; Tordoff et al. 2022) .

47. As an additional example, Dr. Levine critiques an article cited in my original report, de Vries et al. (2014), suggesting that the study showed poor health outcomes for four participants. (Levine Report, ¶ 39). Once again, Dr. Levine misrepresents the literature. One patient died from post-surgical necrotizing fasciitis, a bacterial infection that can be a side effect of any surgery. Dr. Levine falsely suggests that three patients developed obesity and diabetes due to hormone therapy (*id.*), but the study only states that three study participants were ineligible for surgery due to those conditions, and does not report them as side effects of the hormone therapy (de Vries et al. 2014).

48. Levine also cites C.M. Wiepjes, et al. (2020) in paragraph 110 n.174 of his report for the proposition that rates of suicide are similar across all stages of transition. But while this Dutch study shows a higher suicide rate in transgender patients of the clinic than in the *general* population, it also showed a *decrease* in the suicide rate for transgender women over time, and made no assertions of the effect of treatment on suicide risk. Finally, Dr. Levine invokes Bränström and Panchankis as “the most conclusive results” regarding the effects of gender

affirming care. (Levine Report, ¶ 111 et seq.). His argument appears to be that because a correction was issued as to some findings in the paper, this should be understood as casting doubt on the efficacy of this care writ large. But there is a broad body of scientific literature establishing the health benefits of access to gender-confirming care, and Dr. Levine's focus on this particular article does not affect the breadth of the larger literature establishing that this care is safe and effective.

49. Dr. Levine also claims that the Endocrine Society "implores researchers to not conflate biological sex ... with the concept of gender identity." (Levine Report, ¶ 17 (citing Bhargava A., et al.)). This both misunderstands the nature of my original testimony, which is that all people have a collection of sex-related characteristics; and misconstrues Bhargava, which expressly points readers to the Endocrine Society guidelines for treatment of transgender people. As I previously explained (Karasic Report, ¶ 20), those guidelines expressed caution against the use of the term "biological sex" as imprecise. (Hembree, et al., 2017).

50. As another example, Dr. Levine attempts to undermine the WPATH Standards of Care by invoking a decision of the U.S. Department of Health and Human Services involving an exclusion of coverage for gender-affirming care. (Levine Report, ¶ 24). He neglects to mention this decision was issued as part of the agency's determination that it should *remove* the exclusion on coverage for gender-affirming care. Dep't of Health and Human Servs., Departmental Appeals Board, Appellate Div., NCD 140.3, Transsexual Surgery (2014).

51. Dr. Levine claims that I prefer to rely upon "systematic reviews of evidence commissioned and paid for by WPATH." (Levine Report, ¶ 28). Other than the WPATH Standards of Care and WPATH Position Statements, which are organized and released by WPATH, none of my citations of scientific evidence on the benefits of transgender care are

“commissioned and paid for by WPATH.” The studies cited are the result of independent research that is submitted to scientific journals and subjected to peer review before publication.

52. Dr. Levine’s assertions that the evidence base for treatment of gender dysphoria is of “very low quality and unfit tool for clinical decision-making.” But this ignores that the quality of the evidence base for gender-affirming care is well in line with a variety of other conditions that are routinely treated. Even the source he cites, Dahlen, et al. 2021, acknowledges that “finding poor quality [clinical practice guidelines] is not confined to this area of healthcare.”

53. Dr. Levine mentions ratings of quality of evidence for transgender care, including randomized control trials. (Levine Report, ¶ 96). Randomized, controlled, blinded trials of whether a child or adult is allowed to transition are not possible. Often evidence is derived from lesser-graded evidence, not only for transgender care, but for many treatments for which randomized, controlled, blinded trials are not possible.

DR. LEVINE’S DESCRIPTION OF GENDER-AFFIRMING CARE FOR ADOLESCENTS WITH GENDER DYSPHORIA BEARS NO RESEMBLANCE TO THE PREVAILING TREATMENT PROTOCOLS

54. Dr. Levine offers a description of medical care for adolescents with gender dysphoria that bears no resemblance to the widely accepted protocols for treatment articulated in the WPATH Standards of Care 7 (“WPATH SOC”) and the Endocrine Society Guideline. Throughout his report, Dr. Levine claims that doctors who provide medical interventions to treat gender dysphoria “are expected to accept a patient’s self-diagnosis of gender dysphoria,” rush to provide medical interventions without psychiatric assessments of patients, disregard other mental health and family issues that could be causing the patient distress, oppose psychotherapy, and fail to inform patients and their families of the risks associated with treatment. (See, e.g., Levine, ¶ 148).

55. Dr. Levine suggests that this is not just an accepted mode of treatment, but “expected”—but the model he describes is completely at odds with the protocols provided in the WPATH SOC and the Endocrine Society Guideline:

- The protocols provide that before any medical or surgical interventions are provided to adolescents, a careful mental health assessment should be conducted to ascertain whether the diagnostic criteria for Gender Dysphoria in Adolescents and Adults are met and the appropriateness of such care for the patient. (Coleman, et al., 2012, at 18; Hembree, et al., 2017, at 3877).
- The protocols provide for the mental health assessment to evaluate other issues that may be causing the patient distress. (Coleman, et al., 2012, at 18 (“Before any physical interventions are considered for adolescents, extensive exploration of psychological, family, and social issues should be undertaken.”); Hembree, et al., 2017, at 3876 (clinicians must be able to diagnose psychiatric conditions)).
- The protocols provide that clinicians should ensure that any psychiatric conditions are appropriately treated and that it is important that mental health care is available to patients before, during, and sometimes after transitioning. (Hembree, et al., 2017, at 3876, 3879.)
- The protocols provide for a rigorous informed consent process that includes informing the patient and their parents of side effects of treatment, including the potential loss of fertility. For hormone therapy, in addition to requiring the parents’ informed consent, the adolescent must have “sufficient mental capacity . . . to estimate the consequences of this (partly) irreversible treatment, weigh the benefits and risks, and give informed consent.” (Hembree, et al., 2017, at 3878.)

56. As described above, under the WPATH SOC and Endocrine Society Guideline, affirming care for transgender youth does not mean steering them in any particular direction, but rather supporting them through their period of exploration of gender expression and increasing self-awareness of their identity. (Coleman, et al., 2012, at 18; Ehrensaft, 2017). The WPATH SOC 7 makes clear that “[h]ormonal or surgical interventions are appropriate for some adolescents, but not for others.” (Coleman, et al., 2012, at 16).

57. There is no basis for Dr. Levine’s suggestion that providing gender-affirming medical care will cause youth with gender dysphoria who would otherwise desist to, instead, persist. (See, e.g., Levine, ¶¶ 139, 154). This claim erroneously relies on the assertion that social transition in prepubertal children can cause their gender dysphoria to persist into adolescence. First, contrary to Dr. Levine’s suggestion, the fact that there is a correlation between social transition prior to puberty and persistence does not establish that social transition causes persistence of gender dysphoria. A recently published study, which Dr. Levine fails to cite, has found this not to be true. The study authors found that gender identification did not meaningfully differ before and after social transition. (Rae, et al., 2019). As a Steensma study reported (see Steensma, 2013), the intensity of gender dysphoria prior to puberty predicted persistence, and children with more intense dysphoria were more likely to socially transition. Second, whatever conclusions can be drawn from these desistance studies about the impact of gender affirmation on the persistence rates in prepubertal children, as discussed above, this research does not apply to adolescents with gender dysphoria, for whom desistance is rare.

58. In addition, Dr. Levine’s criticism, particularly with regard to desistance, relies heavily on studies relying on the now obsolete and overly broad categorizations contained in the DSM III-R and DSM IV for “Gender Identity Disorder in Children.” Importantly, one could meet

criteria for the DSM III-R or DSM-IV diagnosis of gender identity disorder without identifying as transgender because the diagnostic criteria did not require identification with a gender other than the one assigned to the person at birth. This problem with the diagnosis was remedied with the new DSM-5 diagnosis of “gender dysphoria in children,” which requires a child to have “a strong desire to be of the other gender or an insistence that one is the other gender (or some alternative gender different from one’s assigned gender).” It is therefore not surprising that the children discussed in the studies cited by Dr. Levine did not identify as transgender at follow-up as these children did not necessarily identify as transgender to begin with.

59. Dr. Levine cites a survey by Lisa Littman of participants on discussion websites for parents who opposed their children’s gender transition and derived a theory that adolescents develop “rapid onset gender dysphoria” via “social contagion.” This survey has been contradicted by the World Professional Association for Transgender Health. The survey was of parents’ perception after learning of their children’s transgender identity, rather than of the children themselves, and conflicts with the experience of those who work with the children themselves. No conclusions can be drawn from the Littman survey other than the fact that some anonymous people recruited from internet sites who opposed transition care for youth speculate that transgender identity is due to social contagion. This speculation from anonymous people online does not constitute a reliable source, and does not establish a true phenomenon. No study to date has demonstrated that the determinant of gender identity is psychosocial. Moreover, the diagnostic criteria for gender dysphoria are rigorous and if there were individuals claiming a transgender identity to fit into a peer group, they would not meet the criteria for a gender dysphoria diagnosis let alone be deemed to need medical interventions.

60. Furthermore, noting the serious flaws with the Littman survey, a correction to the article was later published, which noted that, “Rapid-onset gender dysphoria (ROGD) is not a formal mental health diagnosis at this time” and that the “report did not collect data from the adolescents and young adults (AYAs) or clinicians and therefore does not validate the phenomenon.” The correction goes on to say that “the term should not be used in any way to imply that it explains the experiences of all gender dysphoric youth.”⁴

**DR. LEVINE OFFERS NO ALTERNATIVE EFFECTIVE TREATMENT
FOR PEOPLE WITH GENDER DYSPHORIA**

61. Dr. Levine disapproves of existing protocols for treating gender dysphoria, but the alternative treatments he proposes lack any evidence of effectiveness.

62. Dr. Levine claims there is evidence that psychotherapy can sometimes enable a return to a gender identity that matches sex assigned at birth but offers nothing but anecdotes of “reinvestment” in one’s sex assigned at birth. (Levine Report, ¶ 88 (“I and other clinicians have witnessed reinvestment in the patient’s biological sex in some individual patients following a period of time.”)). Efforts were made in the past to assist patients to come to identify with their sex assigned at birth but those efforts have proven to be ineffective and harmful and, thus, treatment with the goal of changing a person’s gender identity is no longer considered ethical. (Coleman, et al., 2012, at 16; American Psychological Association, 2021).

⁴ Dr. Levine states that I attempted to “suppress the presentation of a key research paper at a scientific conference.” (Levine Report, ¶ 58). This is simply incorrect. Dr. Levine is referring to the conference abstract by Littman published by the Journal of Adolescent Health in 2017. The poster was accepted for a conference sponsored by the Society for Adolescent Health and Medicine. I was not involved in this conference or organization, and had no awareness of the abstract, the conference, or the organization that held the conference until after the conference, and certainly made no effort to suppress its presentation at the conference.

63. But even Dr. Levine admits that there is no scientific support for his preferred method of withholding care from transgender youth. (Levine Report, ¶ 37 (“It is true that quality evidence proving long-term effectiveness of psychotherapy interventions [alone] is missing”). While psychotherapy can provide support with issues that arise in tandem with gender dysphoria, this approach alone is not a substitute for medical interventions where medically indicated for a particular patient.

64. Dr. Levine points to “gender-psychotherapy” and “watchful waiting” as alternative treatment approaches to the existing treatment paradigms outlined in the WPATH SOC and the Endocrine Society Guideline. (Levine Report, ¶ 160). While “watchful waiting” is an approach for prepubertal children followed by some clinicians, it is not an accepted approach used with adolescents. That is because, while there are studies finding that many prepubertal children diagnosed with Gender Identity Disorder (a precursor diagnosis to Gender Dysphoria in Children) identified with their sex assigned at birth at a later follow up, there is no evidence that gender dysphoria that continues into adolescence is likely to desist. To the contrary, all of the research on this topic makes clear that desistance is a prepubertal phenomenon. (*See, e.g.*, Steensma, 2011). Dr. Levine himself admits that his advocacy for watchful waiting is unsupported by scientific evidence. (Levine, ¶ 160 (“The results of alternative approaches, such as watchful waiting for children, or gender-psychotherapy, are likewise lacking in long-term evidence.”)).

65. Dr. Levine relies significantly on the work of Kenneth Zucker in support of “watchful waiting.” (*See, e.g.*, Levine, ¶ 90). But Zucker recognizes the need for medical interventions for gender dysphoria in adolescence and does not suggest that watchful waiting is appropriate for adolescents. (Zucker, et al., 2010). His clinic in Toronto provided puberty blockers and hormone therapy to adolescents with gender dysphoria. (Zucker, et al., 2010). Similarly, the

Dutch researchers who coined the term watchful waiting for prepubertal children did the seminal research on medical interventions for those patients whose gender dysphoria persists until adolescence and found that puberty blockers, hormones, and later surgery successfully treated gender dysphoria in the same youth once they were of developmental stage for those treatments. (de Vries, 2011; Steensma, 2011; de Vries, 2014). The result was that mental health outcomes significantly improved in the youth who received transition care in the study. *Id.* Other studies have also shown improvement in mental health measures in trans youth with gender-affirming medical treatment. (van der Miesen, et al., 2020; Kuper, et al., 2020). It is important to emphasize that in the Dutch research, the youth who were going to desist from the gender identity disorder diagnosis were not treated with medications and surgery, and desistance occurred before puberty. The youth whose gender dysphoria persisted to puberty, and who were therefore treated, did not have a reversion to the gender identity congruent with sex assigned at birth, nor did any research participants who transitioned experience regret at doing so.

66. Dr. Levine admits that “alternative approaches” to gender affirming care lack evidence but then states “psychotherapy is a promising intervention for young people.” (Levine Report, ¶ 160). Some young people, transgender or not, benefit from psychotherapy, which is not a new treatment for those in distress. However, this therapy does not change gender identity, and is not a substitute for gender-affirming medical and surgical care in those where such interventions are medically indicated. Dr. Levine appears to endorse psychotherapy for the purpose of attempting to persuade transgender youth that they are not transgender. Gender identity change efforts, or conversion therapy, have been rejected by major mental health organizations as harmful and unethical, including the American Psychological Association and the American Psychiatric Association.

67. Dr. Levine asserts that a number of countries “have either stopped or sharply curtailed” gender-affirming care. (Levine, ¶ 102). But none of the countries he discussed—U.K., Finland, or Sweden—has banned care. Sweden, in response to the *Bell v. Tavistock* court decision in the U.K. (since overruled), made a decision to stop initiating gender-affirming medical interventions to minors outside of the context of research protocols, but to continue to provide care to existing patients. In none of these countries has a law banning transition care to minors been enacted and in none of these countries is gender-affirming care for minors unavailable.

68. The suggestion that adolescents can just wait until they are 18 years old to get care ignores the harm of not providing the care. Allowing endogenous puberty to advance is not a neutral decision. For many adolescents, the development of secondary sex characteristics that do not match their gender identity can have a severe negative impact on their mental health and can exacerbate lifelong dysphoria because some of those characteristics are impossible to change later through surgeries.

69. As I explained in my original report, the overarching goal of treatment is to eliminate the distress of gender dysphoria by aligning an individual patient’s body and presentation with their internal sense of self. The denial of medically indicated care to transgender people not only results in the prolonging of their gender dysphoria, but causes additional distress and poses other health risks, such as depression, posttraumatic stress disorder, and suicidality. The prevalence of these mental health conditions is widely thought to be a consequence of minority stress, the chronic stress from coping with societal stigma and discrimination because of one’s identity, including gender identity and gender expression. (American Medical Association, 2019). In other words, lack of access to gender affirming care directly contributes to poorer mental health outcomes for transgender people. (Owen-Smith, et al., 2018).

**DR. LEVINE DRAWS INAPPROPRIATE CONCLUSIONS FROM THE
NUMBERS AND SEX-RATIOS OF GENDER CLINIC REFERRALS**

70. Dr. Levine references the increase in the numbers of referrals to gender clinics, and changes in sex ratios of patients. (Levine, ¶¶ 59, 91). As an initial matter, in his caricature of doctors pushing medical transition, Dr. Levine says the field is ignoring and avoiding exploration of these developments. (Levine, ¶ 59). That is not the case. Indeed, the draft WPATH SOC, 8th revision Adolescent chapter specifically discusses the increase in referrals to gender clinics and the sex ratios of these young patients. (See WPATH SOC Draft for Public Comment - Adolescent, Dec. 2021, at 1, 3-4). But Dr. Levine draws unsupported conclusions about the rise in number of referrals and changes in sex ratios observed in some clinics. He claims this means adolescents are rapidly adopting a transgender identity only to change their mind later, leading them to undergo irreversible medical treatments they later regret. This conclusion is unfounded.

71. The rise in numbers of referrals is hardly surprising given the greater awareness on the part of youth and their parents of what gender dysphoria is and that care is available, as well as the significant increase in the number of clinics available to provide care. In addition, the stigma associated with being transgender, while still significant, has lessened in recent years. Coming out to parents and seeking care are options that did not exist for many youth until recently, so an increase in numbers of referrals to gender clinics is not surprising.

72. While increases in numbers and changes in sex ratios of patients referred to some gender clinics have been reported, since the number of patients referred to gender clinics reflects only a small fraction of the people identifying as transgender, these changes may reflect changes in referral patterns to clinics rather than changes in the number of people identifying as transgender.

73. Sex ratios of patients vary from clinic to clinic and over time. When I was the psychiatrist for the Dimensions Clinic for transgender youth in San Francisco from 2003 to 2020, a consistent majority of my patients were assigned female at birth. Other clinics have had more assigned male at birth patients. The rise in numbers and percentage of patients assigned female at birth observed at some clinics in recent years is not surprising given the historical development of the study of gender dysphoria in youth. The first large American study of gender non-conforming youth was the Feminine Boy Study at UCLA. There was significant societal discomfort with and rejection of boys who departed from sex stereotypes—the director of the study referred to them as “sissy boys” in the book resulting from the study—and these boys often experienced bullying from peers. In this context, boys who were perceived to be effeminate were the population brought in to psychiatrists by their parents and were the population that was initially studied by researchers. (Green, 1987). Parents were not as concerned about gender non-conforming girls as they were more socially accepted. There was also less awareness among the general public of the existence of transgender males and that transitioning was an option for individuals assigned female at birth who were experiencing gender dysphoria. The increase in awareness in recent decades made it possible for individuals who ultimately came to identify as transgender men to come out and seek care.

CONCLUSION

74. Dr. Levine presents a perspective on transgender health that is far from the mainstream medicine and mental health practices. The practice of transgender health and the medical necessity of the provision of health care to treat gender dysphoria is well established. Transgender patients benefit from their healthcare, regret rates are very low, and the treatments

endorsed by mainstream medicine have been shown to improve quality of life, decrease distress, and decrease suicidality.

* * *

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and corrected.


Executed this 17 day of March, 2022.

A handwritten signature in black ink, appearing to read 'DK' followed by a stylized flourish.

Dan H. Karasic, M.D.

Subscribed and sworn before me, a Notary Public in and for the County of Norfolk, State of
Virginia, this 17 day of March, 2022.





Signature of Notary

This notarial act was performed online by way of
two-way audio/video communication technology.

1647460027-karasic-rebuttal-report_final

Final Audit Report

2022-03-17

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Exhibit A

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First Amended Class Action Complaint, *Fain v. Crouch*, Case No. 3:20-cv-00740 (S.D.W.V.)

Health plan booklets for plans offered through the West Virginia Public Employees Insurance Agency and the West Virginia Bureau for Medicaid Services

Medical records of Plaintiffs Christopher Fain, Shauntae Anderson, and Leanne James

Gender Dysphoria

In this chapter, there is one overarching diagnosis of gender dysphoria, with separate developmentally appropriate criteria sets for children and for adolescents and adults. The area of sex and gender is highly controversial and has led to a proliferation of terms whose meanings vary over time and within and between disciplines. An additional source of confusion is that in English “sex” connotes both male/female and sexuality. This chapter employs constructs and terms as they are widely used by clinicians from various disciplines with specialization in this area. In this chapter, *sex* and *sexual* refer to the biological indicators of male and female (understood in the context of reproductive capacity), such as in sex chromosomes, gonads, sex hormones, and nonambiguous internal and external genitalia. Disorders of sex development denote conditions of inborn somatic deviations of the reproductive tract from the norm and/or discrepancies among the biological indicators of male and female. *Cross-sex* hormone treatment denotes the use of feminizing hormones in an individual assigned male at birth based on traditional biological indicators or the use of masculinizing hormones in an individual assigned female at birth.

The need to introduce the term *gender* arose with the realization that for individuals with conflicting or ambiguous biological indicators of sex (i.e., “intersex”), the lived role in society and/or the identification as male or female could not be uniformly associated with or predicted from the biological indicators and, later, that some individuals develop an identity as female or male at variance with their uniform set of classical biological indicators. Thus, *gender* is used to denote the public (and usually legally recognized) lived role as boy or girl, man or woman, but, in contrast to certain social constructionist theories, biological factors are seen as contributing, in interaction with social and psychological factors, to gender development. *Gender assignment* refers to the initial assignment as male or female. This occurs usually at birth and, thereby, yields the “natal gender.” *Gender-atypical* refers to somatic features or behaviors that are not typical (in a statistical sense) of individuals with the same assigned gender in a given society and historical era; for behavior, *gender-nonconforming* is an alternative descriptive term. *Gender reassignment* denotes an official (and usually legal) change of gender. *Gender identity* is a category of social identity and refers to an individual’s identification as male, female, or, occasionally, some category other than male or female. *Gender dysphoria* as a general descriptive term refers to an individual’s affective/cognitive discontent with the assigned gender but is more specifically defined when used as a diagnostic category. *Transgender* refers to the broad spectrum of individuals who transiently or persistently identify with a gender different from their natal gender. *Transsexual* denotes an individual who seeks, or has undergone, a social transition from male to female or female to male, which in many, but not all, cases also involves a somatic transition by cross-sex hormone treatment and genital surgery (*sex reassignment surgery*).

Gender dysphoria refers to the distress that may accompany the incongruence between one’s experienced or expressed gender and one’s assigned gender. Although not all individuals will experience distress as a result of such incongruence, many are distressed if the desired physical interventions by means of hormones and/or surgery are not available. The current term is more descriptive than the previous DSM-IV term *gender identity disorder* and focuses on dysphoria as the clinical problem, not identity per se.

Gender Dysphoria

Diagnostic Criteria

Gender Dysphoria in Children

302.6 (F64.2)

- A. A marked incongruence between one's experienced/expressed gender and assigned gender, of at least 6 months' duration, as manifested by at least six of the following (one of which must be Criterion A1):
1. A strong desire to be of the other gender or an insistence that one is the other gender (or some alternative gender different from one's assigned gender).
 2. In boys (assigned gender), a strong preference for cross-dressing or simulating female attire; or in girls (assigned gender), a strong preference for wearing only typical masculine clothing and a strong resistance to the wearing of typical feminine clothing.
 3. A strong preference for cross-gender roles in make-believe play or fantasy play.
 4. A strong preference for the toys, games, or activities stereotypically used or engaged in by the other gender.
 5. A strong preference for playmates of the other gender.
 6. In boys (assigned gender), a strong rejection of typically masculine toys, games, and activities and a strong avoidance of rough-and-tumble play; or in girls (assigned gender), a strong rejection of typically feminine toys, games, and activities.
 7. A strong dislike of one's sexual anatomy.
 8. A strong desire for the primary and/or secondary sex characteristics that match one's experienced gender.
- B. The condition is associated with clinically significant distress or impairment in social, school, or other important areas of functioning.

Specify if:

With a disorder of sex development (e.g., a congenital adrenogenital disorder such as 255.2 [E25.0] congenital adrenal hyperplasia or 259.50 [E34.50] androgen insensitivity syndrome).

Coding note: Code the disorder of sex development as well as gender dysphoria.

Gender Dysphoria in Adolescents and Adults

302.85 (F64.1)

- A. A marked incongruence between one's experienced/expressed gender and assigned gender, of at least 6 months' duration, as manifested by at least two of the following:
1. A marked incongruence between one's experienced/expressed gender and primary and/or secondary sex characteristics (or in young adolescents, the anticipated secondary sex characteristics).
 2. A strong desire to be rid of one's primary and/or secondary sex characteristics because of a marked incongruence with one's experienced/expressed gender (or in young adolescents, a desire to prevent the development of the anticipated secondary sex characteristics).
 3. A strong desire for the primary and/or secondary sex characteristics of the other gender.
 4. A strong desire to be of the other gender (or some alternative gender different from one's assigned gender).
 5. A strong desire to be treated as the other gender (or some alternative gender different from one's assigned gender).
 6. A strong conviction that one has the typical feelings and reactions of the other gender (or some alternative gender different from one's assigned gender).

- B. The condition is associated with clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify if:

With a disorder of sex development (e.g., a congenital adrenogenital disorder such as 255.2 [E25.0] congenital adrenal hyperplasia or 259.50 [E34.50] androgen insensitivity syndrome).

Coding note: Code the disorder of sex development as well as gender dysphoria.

Specify if:

Posttransition: The individual has transitioned to full-time living in the desired gender (with or without legalization of gender change) and has undergone (or is preparing to have) at least one cross-sex medical procedure or treatment regimen—namely, regular cross-sex hormone treatment or gender reassignment surgery confirming the desired gender (e.g., penectomy, vaginoplasty in a natal male; mastectomy or phalloplasty in a natal female).

Specifiers

The posttransition specifier may be used in the context of continuing treatment procedures that serve to support the new gender assignment.

Diagnostic Features

Individuals with gender dysphoria have a marked incongruence between the gender they have been assigned to (usually at birth, referred to as *natal gender*) and their experienced/expressed gender. This discrepancy is the core component of the diagnosis. There must also be evidence of distress about this incongruence. Experienced gender may include alternative gender identities beyond binary stereotypes. Consequently, the distress is not limited to a desire to simply be of the other gender, but may include a desire to be of an alternative gender, provided that it differs from the individual's assigned gender.

Gender dysphoria manifests itself differently in different age groups. Prepubertal natal girls with gender dysphoria may express the wish to be a boy, assert they are a boy, or assert they will grow up to be a man. They prefer boys' clothing and hairstyles, are often perceived by strangers as boys, and may ask to be called by a boy's name. Usually, they display intense negative reactions to parental attempts to have them wear dresses or other feminine attire. Some may refuse to attend school or social events where such clothes are required. These girls may demonstrate marked cross-gender identification in role-playing, dreams, and fantasies. Contact sports, rough-and-tumble play, traditional boyhood games, and boys as playmates are most often preferred. They show little interest in stereotypically feminine toys (e.g., dolls) or activities (e.g., feminine dress-up or role-play). Occasionally, they refuse to urinate in a sitting position. Some natal girls may express a desire to have a penis or claim to have a penis or that they will grow one when older. They may also state that they do not want to develop breasts or menstruate.

Prepubertal natal boys with gender dysphoria may express the wish to be a girl or assert they are a girl or that they will grow up to be a woman. They have a preference for dressing in girls' or women's clothes or may improvise clothing from available materials (e.g., using towels, aprons, and scarves for long hair or skirts). These children may role-play female figures (e.g., playing "mother") and often are intensely interested in female fantasy figures. Traditional feminine activities, stereotypical games, and pastimes (e.g., "playing house"; drawing feminine pictures; watching television or videos of favorite female characters) are most often preferred. Stereotypical female-type dolls (e.g., Barbie) are often favorite toys, and girls are their preferred playmates. They avoid rough-and-tumble play and competitive sports and have little interest in stereotypically masculine toys (e.g., cars, trucks). Some may pretend not to have a penis and insist on sitting to urinate. More

rarely, they may state that they find their penis or testes disgusting, that they wish them removed, or that they have, or wish to have, a vagina.

In young adolescents with gender dysphoria, clinical features may resemble those of children or adults with the condition, depending on developmental level. As secondary sex characteristics of young adolescents are not yet fully developed, these individuals may not state dislike of them, but they are concerned about imminent physical changes.

In adults with gender dysphoria, the discrepancy between experienced gender and physical sex characteristics is often, but not always, accompanied by a desire to be rid of primary and/or secondary sex characteristics and/or a strong desire to acquire some primary and/or secondary sex characteristics of the other gender. To varying degrees, adults with gender dysphoria may adopt the behavior, clothing, and mannerisms of the experienced gender. They feel uncomfortable being regarded by others, or functioning in society, as members of their assigned gender. Some adults may have a strong desire to be of a different gender and treated as such, and they may have an inner certainty to feel and respond as the experienced gender without seeking medical treatment to alter body characteristics. They may find other ways to resolve the incongruence between experienced/expressed and assigned gender by partially living in the desired role or by adopting a gender role neither conventionally male nor conventionally female.

Associated Features Supporting Diagnosis

When visible signs of puberty develop, natal boys may shave their legs at the first signs of hair growth. They sometimes bind their genitals to make erections less visible. Girls may bind their breasts, walk with a stoop, or use loose sweaters to make breasts less visible. Increasingly, adolescents request, or may obtain without medical prescription and supervision, hormonal suppressors ("blockers") of gonadal steroids (e.g., gonadotropin-releasing hormone [GnRH] analog, spironolactone). Clinically referred adolescents often want hormone treatment and many also wish for gender reassignment surgery. Adolescents living in an accepting environment may openly express the desire to be and be treated as the experienced gender and dress partly or completely as the experienced gender, have a hairstyle typical of the experienced gender, preferentially seek friendships with peers of the other gender, and/or adopt a new first name consistent with the experienced gender. Older adolescents, when sexually active, usually do not show or allow partners to touch their sexual organs. For adults with an aversion toward their genitals, sexual activity is constrained by the preference that their genitals not be seen or touched by their partners. Some adults may seek hormone treatment (sometimes without medical prescription and supervision) and gender reassignment surgery. Others are satisfied with either hormone treatment or surgery alone.

Adolescents and adults with gender dysphoria before gender reassignment are at increased risk for suicidal ideation, suicide attempts, and suicides. After gender reassignment, adjustment may vary, and suicide risk may persist.

Prevalence

For natal adult males, prevalence ranges from 0.005% to 0.014%, and for natal females, from 0.002% to 0.003%. Since not all adults seeking hormone treatment and surgical reassignment attend specialty clinics, these rates are likely modest underestimates. Sex differences in rate of referrals to specialty clinics vary by age group. In children, sex ratios of natal boys to girls range from 2:1 to 4.5:1. In adolescents, the sex ratio is close to parity; in adults, the sex ratio favors natal males, with ratios ranging from 1:1 to 6.1:1. In two countries, the sex ratio appears to favor natal females (Japan: 2.2:1; Poland: 3.4:1).

Development and Course

Because expression of gender dysphoria varies with age, there are separate criteria sets for children versus adolescents and adults. Criteria for children are defined in a more con-

crete, behavioral manner than those for adolescents and adults. Many of the core criteria draw on well-documented behavioral gender differences between typically developing boys and girls. Young children are less likely than older children, adolescents, and adults to express extreme and persistent anatomic dysphoria. In adolescents and adults, incongruence between experienced gender and somatic sex is a central feature of the diagnosis. Factors related to distress and impairment also vary with age. A very young child may show signs of distress (e.g., intense crying) only when parents tell the child that he or she is “really” not a member of the other gender but only “desires” to be. Distress may not be manifest in social environments supportive of the child’s desire to live in the role of the other gender and may emerge only if the desire is interfered with. In adolescents and adults, distress may manifest because of strong incongruence between experienced gender and somatic sex. Such distress may, however, be mitigated by supportive environments and knowledge that biomedical treatments exist to reduce incongruence. Impairment (e.g., school refusal, development of depression, anxiety, and substance abuse) may be a consequence of gender dysphoria.

Gender dysphoria without a disorder of sex development. For clinic-referred children, onset of cross-gender behaviors is usually between ages 2 and 4 years. This corresponds to the developmental time period in which most typically developing children begin expressing gendered behaviors and interests. For some preschool-age children, both pervasive cross-gender behaviors and the expressed desire to be the other gender may be present, or, more rarely, labeling oneself as a member of the other gender may occur. In some cases, the expressed desire to be the other gender appears later, usually at entry into elementary school. A small minority of children express discomfort with their sexual anatomy or will state the desire to have a sexual anatomy corresponding to the experienced gender (“anatomic dysphoria”). Expressions of anatomic dysphoria become more common as children with gender dysphoria approach and anticipate puberty.

Rates of persistence of gender dysphoria from childhood into adolescence or adulthood vary. In natal males, persistence has ranged from 2.2% to 30%. In natal females, persistence has ranged from 12% to 50%. Persistence of gender dysphoria is modestly correlated with dimensional measures of severity ascertained at the time of a childhood baseline assessment. In one sample of natal males, lower socioeconomic background was also modestly correlated with persistence. It is unclear if particular therapeutic approaches to gender dysphoria in children are related to rates of long-term persistence. Extant follow-up samples consisted of children receiving no formal therapeutic intervention or receiving therapeutic interventions of various types, ranging from active efforts to reduce gender dysphoria to a more neutral, “watchful waiting” approach. It is unclear if children “encouraged” or supported to live socially in the desired gender will show higher rates of persistence, since such children have not yet been followed longitudinally in a systematic manner. For both natal male and female children showing persistence, almost all are sexually attracted to individuals of their natal sex. For natal male children whose gender dysphoria does not persist, the majority are *androphilic* (sexually attracted to males) and often self-identify as gay or homosexual (ranging from 63% to 100%). In natal female children whose gender dysphoria does not persist, the percentage who are *gynephilic* (sexually attracted to females) and self-identify as lesbian is lower (ranging from 32% to 50%).

In both adolescent and adult natal males, there are two broad trajectories for development of gender dysphoria: early onset and late onset. *Early-onset gender dysphoria* starts in childhood and continues into adolescence and adulthood; or, there is an intermittent period in which the gender dysphoria desists and these individuals self-identify as gay or homosexual, followed by recurrence of gender dysphoria. *Late-onset gender dysphoria* occurs around puberty or much later in life. Some of these individuals report having had a desire to be of the other gender in childhood that was not expressed verbally to others. Others do not recall any signs of childhood gender dysphoria. For adolescent males with late-onset gender dysphoria, parents often report surprise because they did not see signs of gender

dysphoria during childhood. Expressions of anatomic dysphoria are more common and salient in adolescents and adults once secondary sex characteristics have developed.

Adolescent and adult natal males with early-onset gender dysphoria are almost always sexually attracted to men (androphilic). Adolescents and adults with late-onset gender dysphoria frequently engage in transvestic behavior with sexual excitement. The majority of these individuals are gynephilic or sexually attracted to other posttransition natal males with late-onset gender dysphoria. A substantial percentage of adult males with late-onset gender dysphoria cohabit with or are married to natal females. After gender transition, many self-identify as lesbian. Among adult natal males with gender dysphoria, the early-onset group seeks out clinical care for hormone treatment and reassignment surgery at an earlier age than does the late-onset group. The late-onset group may have more fluctuations in the degree of gender dysphoria and be more ambivalent about and less likely satisfied after gender reassignment surgery.

In both adolescent and adult natal females, the most common course is the early-onset form of gender dysphoria. The late-onset form is much less common in natal females compared with natal males. As in natal males with gender dysphoria, there may have been a period in which the gender dysphoria desisted and these individuals self-identified as lesbian; however, with recurrence of gender dysphoria, clinical consultation is sought, often with the desire for hormone treatment and reassignment surgery. Parents of natal adolescent females with the late-onset form also report surprise, as no signs of childhood gender dysphoria were evident. Expressions of anatomic dysphoria are much more common and salient in adolescents and adults than in children.

Adolescent and adult natal females with early-onset gender dysphoria are almost always gynephilic. Adolescents and adults with the late-onset form of gender dysphoria are usually androphilic and after gender transition self-identify as gay men. Natal females with the late-onset form do not have co-occurring transvestic behavior with sexual excitement.

Gender dysphoria in association with a disorder of sex development. Most individuals with a disorder of sex development who develop gender dysphoria have already come to medical attention at an early age. For many, starting at birth, issues of gender assignment were raised by physicians and parents. Moreover, as infertility is quite common for this group, physicians are more willing to perform cross-sex hormone treatments and genital surgery before adulthood.

Disorders of sex development in general are frequently associated with gender-atypical behavior starting in early childhood. However, in the majority of cases, this does not lead to gender dysphoria. As individuals with a disorder of sex development become aware of their medical history and condition, many experience uncertainty about their gender, as opposed to developing a firm conviction that they are another gender. However, most do not progress to gender transition. Gender dysphoria and gender transition may vary considerably as a function of a disorder of sex development, its severity, and assigned gender.

Risk and Prognostic Factors

Temperamental. For individuals with gender dysphoria without a disorder of sex development, atypical gender behavior among individuals with early-onset gender dysphoria develops in early preschool age, and it is possible that a high degree of atypicality makes the development of gender dysphoria and its persistence into adolescence and adulthood more likely.

Environmental. Among individuals with gender dysphoria without a disorder of sex development, males with gender dysphoria (in both childhood and adolescence) more commonly have older brothers than do males without the condition. Additional predisposing

factors under consideration, especially in individuals with late-onset gender dysphoria (adolescence, adulthood), include habitual fetishistic transvestism developing into autogynephilia (i.e., sexual arousal associated with the thought or image of oneself as a woman) and other forms of more general social, psychological, or developmental problems.

Genetic and physiological. For individuals with gender dysphoria without a disorder of sex development, some genetic contribution is suggested by evidence for (weak) familiarity of transsexualism among nontwin siblings, increased concordance for transsexualism in monozygotic compared with dizygotic same-sex twins, and some degree of heritability of gender dysphoria. As to endocrine findings, no endogenous systemic abnormalities in sex-hormone levels have been found in 46,XY individuals, whereas there appear to be increased androgen levels (in the range found in hirsute women but far below normal male levels) in 46,XX individuals. Overall, current evidence is insufficient to label gender dysphoria without a disorder of sex development as a form of intersexuality limited to the central nervous system.

In gender dysphoria associated with a disorder of sex development, the likelihood of later gender dysphoria is increased if prenatal production and utilization (via receptor sensitivity) of androgens are grossly atypical relative to what is usually seen in individuals with the same assigned gender. Examples include 46,XY individuals with a history of normal male prenatal hormone milieu but inborn nonhormonal genital defects (as in cloacal bladder exstrophy or penile agenesis) and who have been assigned to the female gender. The likelihood of gender dysphoria is further enhanced by additional, prolonged, highly gender-atypical postnatal androgen exposure with somatic virilization as may occur in female-raised and noncastrated 46,XY individuals with 5-alpha reductase-2 deficiency or 17-beta-hydroxysteroid dehydrogenase-3 deficiency or in female-raised 46,XX individuals with classical congenital adrenal hyperplasia with prolonged periods of non-adherence to glucocorticoid replacement therapy. However, the prenatal androgen milieu is more closely related to gendered behavior than to gender identity. Many individuals with disorders of sex development and markedly gender-atypical behavior do not develop gender dysphoria. Thus, gender-atypical behavior by itself should not be interpreted as an indicator of current or future gender dysphoria. There appears to be a higher rate of gender dysphoria and patient-initiated gender change from assigned female to male than from assigned male to female in 46,XY individuals with a disorder of sex development.

Culture-Related Diagnostic Issues

Individuals with gender dysphoria have been reported across many countries and cultures. The equivalent of gender dysphoria has also been reported in individuals living in cultures with institutionalized gender categories other than male or female. It is unclear whether with these individuals the diagnostic criteria for gender dysphoria would be met.

Diagnostic Markers

Individuals with a somatic disorder of sex development show some correlation of final gender identity outcome with the degree of prenatal androgen production and utilization. However, the correlation is not robust enough for the biological factor, where ascertainable, to replace a detailed and comprehensive diagnostic interview evaluation for gender dysphoria.

Functional Consequences of Gender Dysphoria

Preoccupation with cross-gender wishes may develop at all ages after the first 2–3 years of childhood and often interfere with daily activities. In older children, failure to develop age-typical same-sex peer relationships and skills may lead to isolation from peer groups and to distress. Some children may refuse to attend school because of teasing and harass-

ment or pressure to dress in attire associated with their assigned sex. Also in adolescents and adults, preoccupation with cross-gender wishes often interferes with daily activities. Relationship difficulties, including sexual relationship problems, are common, and functioning at school or at work may be impaired. Gender dysphoria, along with atypical gender expression, is associated with high levels of stigmatization, discrimination, and victimization, leading to negative self-concept, increased rates of mental disorder comorbidity, school dropout, and economic marginalization, including unemployment, with attendant social and mental health risks, especially in individuals from resource-poor family backgrounds. In addition, these individuals' access to health services and mental health services may be impeded by structural barriers, such as institutional discomfort or inexperience in working with this patient population.

Differential Diagnosis

Nonconformity to gender roles. Gender dysphoria should be distinguished from simple nonconformity to stereotypical gender role behavior by the strong desire to be of another gender than the assigned one and by the extent and pervasiveness of gender-variant activities and interests. The diagnosis is not meant to merely describe nonconformity to stereotypical gender role behavior (e.g., "tomboyism" in girls, "girly-boy" behavior in boys, occasional cross-dressing in adult men). Given the increased openness of atypical gender expressions by individuals across the entire range of the transgender spectrum, it is important that the clinical diagnosis be limited to those individuals whose distress and impairment meet the specified criteria.

Transvestic disorder. Transvestic disorder occurs in heterosexual (or bisexual) adolescent and adult males (rarely in females) for whom cross-dressing behavior generates sexual excitement and causes distress and/or impairment without drawing their primary gender into question. It is occasionally accompanied by gender dysphoria. An individual with transvestic disorder who also has clinically significant gender dysphoria can be given both diagnoses. In many cases of late-onset gender dysphoria in gynephilic natal males, transvestic behavior with sexual excitement is a precursor.

Body dysmorphic disorder. An individual with body dysmorphic disorder focuses on the alteration or removal of a specific body part because it is perceived as abnormally formed, not because it represents a repudiated assigned gender. When an individual's presentation meets criteria for both gender dysphoria and body dysmorphic disorder, both diagnoses can be given. Individuals wishing to have a healthy limb amputated (termed by some *body integrity identity disorder*) because it makes them feel more "complete" usually do not wish to change gender, but rather desire to live as an amputee or a disabled person.

Schizophrenia and other psychotic disorders. In schizophrenia, there may rarely be delusions of belonging to some other gender. In the absence of psychotic symptoms, insistence by an individual with gender dysphoria that he or she is of some other gender is not considered a delusion. Schizophrenia (or other psychotic disorders) and gender dysphoria may co-occur.

Other clinical presentations. Some individuals with an emasculation desire who develop an alternative, nonmale/nonfemale gender identity do have a presentation that meets criteria for gender dysphoria. However, some males seek castration and/or penectomy for aesthetic reasons or to remove psychological effects of androgens without changing male identity; in these cases, the criteria for gender dysphoria are not met.

Comorbidity

Clinically referred children with gender dysphoria show elevated levels of emotional and behavioral problems—most commonly, anxiety, disruptive and impulse-control, and de-

pressive disorders. In prepubertal children, increasing age is associated with having more behavioral or emotional problems; this is related to the increasing non-acceptance of gender-variant behavior by others. In older children, gender-variant behavior often leads to peer ostracism, which may lead to more behavioral problems. The prevalence of mental health problems differs among cultures; these differences may also be related to differences in attitudes toward gender variance in children. However, also in some non-Western cultures, anxiety has been found to be relatively common in individuals with gender dysphoria, even in cultures with accepting attitudes toward gender-variant behavior. Autism spectrum disorder is more prevalent in clinically referred children with gender dysphoria than in the general population. Clinically referred adolescents with gender dysphoria appear to have comorbid mental disorders, with anxiety and depressive disorders being the most common. As in children, autism spectrum disorder is more prevalent in clinically referred adolescents with gender dysphoria than in the general population. Clinically referred adults with gender dysphoria may have coexisting mental health problems, most commonly anxiety and depressive disorders.

Other Specified Gender Dysphoria

302.6 (F64.8)

This category applies to presentations in which symptoms characteristic of gender dysphoria that cause clinically significant distress or impairment in social, occupational, or other important areas of functioning predominate but do not meet the full criteria for gender dysphoria. The other specified gender dysphoria category is used in situations in which the clinician chooses to communicate the specific reason that the presentation does not meet the criteria for gender dysphoria. This is done by recording "other specified gender dysphoria" followed by the specific reason (e.g., "brief gender dysphoria").

An example of a presentation that can be specified using the "other specified" designation is the following:

The current disturbance meets symptom criteria for gender dysphoria, but the duration is less than 6 months.

Unspecified Gender Dysphoria

302.6 (F64.9)

This category applies to presentations in which symptoms characteristic of gender dysphoria that cause clinically significant distress or impairment in social, occupational, or other important areas of functioning predominate but do not meet the full criteria for gender dysphoria. The unspecified gender dysphoria category is used in situations in which the clinician chooses *not* to specify the reason that the criteria are not met for gender dysphoria, and includes presentations in which there is insufficient information to make a more specific diagnosis.

Endocrine Treatment of Gender-Dysphoric/ Gender-Incongruent Persons: An Endocrine Society* Clinical Practice Guideline

Wylie C. Hembree,¹ Peggy T. Cohen-Kettenis,² Louis Gooren,³ Sabine E. Hannema,⁴ Walter J. Meyer,⁵ M. Hassan Murad,⁶ Stephen M. Rosenthal,⁷ Joshua D. Safer,⁸ Vin Tangpricha,⁹ and Guy G. T'Sjoen¹⁰

¹New York Presbyterian Hospital, Columbia University Medical Center, New York, New York 10032 (Retired); ²VU University Medical Center, 1007 MB Amsterdam, Netherlands (Retired); ³VU University Medical Center, 1007 MB Amsterdam, Netherlands (Retired); ⁴Leiden University Medical Center, 2300 RC Leiden, Netherlands; ⁵University of Texas Medical Branch, Galveston, Texas 77555; ⁶Mayo Clinic Evidence-Based Practice Center, Rochester, Minnesota 55905; ⁷University of California San Francisco, Benioff Children's Hospital, San Francisco, California 94143; ⁸Boston University School of Medicine, Boston, Massachusetts 02118; ⁹Emory University School of Medicine and the Atlanta VA Medical Center, Atlanta, Georgia 30322; and ¹⁰Ghent University Hospital, 9000 Ghent, Belgium

***Cosponsoring Associations:** American Association of Clinical Endocrinologists, American Society of Andrology, European Society for Pediatric Endocrinology, European Society of Endocrinology, Pediatric Endocrine Society, and World Professional Association for Transgender Health.

Objective: To update the "Endocrine Treatment of Transsexual Persons: An Endocrine Society Clinical Practice Guideline," published by the Endocrine Society in 2009.

Participants: The participants include an Endocrine Society–appointed task force of nine experts, a methodologist, and a medical writer.

Evidence: This evidence-based guideline was developed using the Grading of Recommendations, Assessment, Development, and Evaluation approach to describe the strength of recommendations and the quality of evidence. The task force commissioned two systematic reviews and used the best available evidence from other published systematic reviews and individual studies.

Consensus Process: Group meetings, conference calls, and e-mail communications enabled consensus. Endocrine Society committees, members and cosponsoring organizations reviewed and commented on preliminary drafts of the guidelines.

Conclusion: Gender affirmation is multidisciplinary treatment in which endocrinologists play an important role. Gender-dysphoric/gender-incongruent persons seek and/or are referred to endocrinologists to develop the physical characteristics of the affirmed gender. They require a safe and effective hormone regimen that will (1) suppress endogenous sex hormone secretion determined by the person's genetic/gonadal sex and (2) maintain sex hormone levels within the normal range for the person's affirmed gender. Hormone treatment is not recommended for prepubertal gender-dysphoric/gender-incongruent persons. Those clinicians who recommend gender-affirming endocrine treatments—appropriately trained diagnosing clinicians (required), a mental health provider for adolescents (required) and mental health

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professional for adults (recommended)—should be knowledgeable about the diagnostic criteria and criteria for gender-affirming treatment, have sufficient training and experience in assessing psychopathology, and be willing to participate in the ongoing care throughout the endocrine transition. We recommend treating gender-dysphoric/gender-incongruent adolescents who have entered puberty at Tanner Stage G2/B2 by suppression with gonadotropin-releasing hormone agonists. Clinicians may add gender-affirming hormones after a multidisciplinary team has confirmed the persistence of gender dysphoria/gender incongruence and sufficient mental capacity to give informed consent to this partially irreversible treatment. Most adolescents have this capacity by age 16 years old. We recognize that there may be compelling reasons to initiate sex hormone treatment prior to age 16 years, although there is minimal published experience treating prior to 13.5 to 14 years of age. For the care of peripubertal youths and older adolescents, we recommend that an expert multidisciplinary team comprised of medical professionals and mental health professionals manage this treatment. The treating physician must confirm the criteria for treatment used by the referring mental health practitioner and collaborate with them in decisions about gender-affirming surgery in older adolescents. For adult gender-dysphoric/gender-incongruent persons, the treating clinicians (collectively) should have expertise in transgender-specific diagnostic criteria, mental health, primary care, hormone treatment, and surgery, as needed by the patient. We suggest maintaining physiologic levels of gender-appropriate hormones and monitoring for known risks and complications. When high doses of sex steroids are required to suppress endogenous sex steroids and/or in advanced age, clinicians may consider surgically removing natal gonads along with reducing sex steroid treatment. Clinicians should monitor both transgender males (female to male) and transgender females (male to female) for reproductive organ cancer risk when surgical removal is incomplete. Additionally, clinicians should persistently monitor adverse effects of sex steroids. For gender-affirming surgeries in adults, the treating physician must collaborate with and confirm the criteria for treatment used by the referring physician. Clinicians should avoid harming individuals (via hormone treatment) who have conditions other than gender dysphoria/gender incongruence and who may not benefit from the physical changes associated with this treatment. (*J Clin Endocrinol Metab* 102: 3869–3903, 2017)

Summary of Recommendations

1.0 Evaluation of youth and adults

- 1.1. We advise that only trained mental health professionals (MHPs) who meet the following criteria should diagnose gender dysphoria (GD)/gender incongruence in adults: (1) competence in using the Diagnostic and Statistical Manual of Mental Disorders (DSM) and/or the International Statistical Classification of Diseases and Related Health Problems (ICD) for diagnostic purposes, (2) the ability to diagnose GD/gender incongruence and make a distinction between GD/gender incongruence and conditions that have similar features (*e.g.*, body dysmorphic disorder), (3) training in diagnosing psychiatric conditions, (4) the ability to undertake or refer for appropriate treatment, (5) the ability to psychosocially assess the person's understanding, mental health, and social conditions that can impact gender-affirming hormone therapy, and (6) a practice of regularly attending relevant professional meetings. (Ungraded Good Practice Statement)
- 1.2. We advise that only MHPs who meet the following criteria should diagnose GD/gender incongruence in children and adolescents: (1) training in child and adolescent developmental psychology and psychopathology, (2) competence in using the DSM and/or the ICD for diagnostic purposes, (3) the ability to make a distinction between GD/gender incongruence and conditions that have similar features (*e.g.*, body dysmorphic disorder), (4) training in diagnosing psychiatric conditions, (5) the ability to undertake or refer for appropriate treatment, (6) the ability to psychosocially assess the person's understanding and social conditions that can impact gender-affirming hormone therapy, (7) a practice of regularly attending relevant professional meetings, and (8) knowledge of the criteria for puberty blocking and gender-affirming hormone treatment in adolescents. (Ungraded Good Practice Statement)
- 1.3. We advise that decisions regarding the social transition of prepubertal youths with GD/gender incongruence are made with the assistance of an MHP or another experienced professional. (Ungraded Good Practice Statement).

- 1.4. We recommend against puberty blocking and gender-affirming hormone treatment in pre-pubertal children with GD/gender incongruence. (1 ⊕⊕○○)
- 1.5. We recommend that clinicians inform and counsel all individuals seeking gender-affirming medical treatment regarding options for fertility preservation prior to initiating puberty suppression in adolescents and prior to treating with hormonal therapy of the affirmed gender in both adolescents and adults. (1 ⊕⊕⊕○)

2.0 Treatment of adolescents

- 2.1. We suggest that adolescents who meet diagnostic criteria for GD/gender incongruence, fulfill criteria for treatment, and are requesting treatment should initially undergo treatment to suppress pubertal development. (2 ⊕⊕○○)
- 2.2. We suggest that clinicians begin pubertal hormone suppression after girls and boys first exhibit physical changes of puberty. (2 ⊕⊕○○)
- 2.3. We recommend that, where indicated, GnRH analogues are used to suppress pubertal hormones. (1 ⊕⊕○○)
- 2.4. In adolescents who request sex hormone treatment (given this is a partly irreversible treatment), we recommend initiating treatment using a gradually increasing dose schedule after a multidisciplinary team of medical and MHPs has confirmed the persistence of GD/gender incongruence and sufficient mental capacity to give informed consent, which most adolescents have by age 16 years. (1 ⊕⊕○○)
- 2.5. We recognize that there may be compelling reasons to initiate sex hormone treatment prior to the age of 16 years in some adolescents with GD/gender incongruence, even though there are minimal published studies of gender-affirming hormone treatments administered before age 13.5 to 14 years. As with the care of adolescents ≥16 years of age, we recommend that an expert multidisciplinary team of medical and MHPs manage this treatment. (1 ⊕○○○)
- 2.6. We suggest monitoring clinical pubertal development every 3 to 6 months and laboratory parameters every 6 to 12 months during sex hormone treatment. (2 ⊕⊕○○)

3.0 Hormonal therapy for transgender adults

- 3.1. We recommend that clinicians confirm the diagnostic criteria of GD/gender incongruence and

- the criteria for the endocrine phase of gender transition before beginning treatment. (1 ⊕⊕⊕○)
- 3.2. We recommend that clinicians evaluate and address medical conditions that can be exacerbated by hormone depletion and treatment with sex hormones of the affirmed gender before beginning treatment. (1 ⊕⊕⊕○)
- 3.3. We suggest that clinicians measure hormone levels during treatment to ensure that endogenous sex steroids are suppressed and administered sex steroids are maintained in the normal physiologic range for the affirmed gender. (2 ⊕⊕○○)
- 3.4. We suggest that endocrinologists provide education to transgender individuals undergoing treatment about the onset and time course of physical changes induced by sex hormone treatment. (2 ⊕○○○)

4.0 Adverse outcome prevention and long-term care

- 4.1. We suggest regular clinical evaluation for physical changes and potential adverse changes in response to sex steroid hormones and laboratory monitoring of sex steroid hormone levels every 3 months during the first year of hormone therapy for transgender males and females and then once or twice yearly. (2 ⊕⊕○○)
- 4.2. We suggest periodically monitoring prolactin levels in transgender females treated with estrogens. (2 ⊕⊕○○)
- 4.3. We suggest that clinicians evaluate transgender persons treated with hormones for cardiovascular risk factors using fasting lipid profiles, diabetes screening, and/or other diagnostic tools. (2 ⊕⊕○○)
- 4.4. We recommend that clinicians obtain bone mineral density (BMD) measurements when risk factors for osteoporosis exist, specifically in those who stop sex hormone therapy after gonadectomy. (1 ⊕⊕○○)
- 4.5. We suggest that transgender females with no known increased risk of breast cancer follow breast-screening guidelines recommended for non-transgender females. (2 ⊕⊕○○)
- 4.6. We suggest that transgender females treated with estrogens follow individualized screening according to personal risk for prostatic disease and prostate cancer. (2 ⊕○○○)
- 4.7. We advise that clinicians determine the medical necessity of including a total hysterectomy and oophorectomy as part of gender-affirming surgery. (Ungraded Good Practice Statement)

5.0 Surgery for sex reassignment and gender confirmation

- 5.1. We recommend that a patient pursue genital gender-affirming surgery only after the MHP and the clinician responsible for endocrine transition therapy both agree that surgery is medically necessary and would benefit the patient's overall health and/or well-being. (1 ⊕⊕○○)
- 5.2. We advise that clinicians approve genital gender-affirming surgery only after completion of at least 1 year of consistent and compliant hormone treatment, unless hormone therapy is not desired or medically contraindicated. (Ungraded Good Practice Statement)
- 5.3. We advise that the clinician responsible for endocrine treatment and the primary care provider ensure appropriate medical clearance of transgender individuals for genital gender-affirming surgery and collaborate with the surgeon regarding hormone use during and after surgery. (Ungraded Good Practice Statement)
- 5.4. We recommend that clinicians refer hormone-treated transgender individuals for genital surgery when: (1) the individual has had a satisfactory social role change, (2) the individual is satisfied about the hormonal effects, and (3) the individual desires definitive surgical changes. (1 ⊕○○○)
- 5.5. We suggest that clinicians delay gender-affirming genital surgery involving gonadectomy and/or hysterectomy until the patient is at least 18 years old or legal age of majority in his or her country. (2 ⊕⊕○○)
- 5.6. We suggest that clinicians determine the timing of breast surgery for transgender males based upon the physical and mental health status of the individual. There is insufficient evidence to recommend a specific age requirement. (2 ⊕○○○)

Changes Since the Previous Guideline

Both the current guideline and the one published in 2009 contain similar sections. Listed here are the sections contained in the current guideline and the corresponding number of recommendations: Introduction, Evaluation of Youth and Adults (5), Treatment of Adolescents (6), Hormonal Therapy for Transgender Adults (4), Adverse Outcomes Prevention and Long-term Care (7), and Surgery for Sex Reassignment and Gender Confirmation (6). The current introduction updates the diagnostic classification of "gender dysphoria/gender incongruence." It also reviews the development of "gender identity" and summarizes its natural development. The section on

clinical evaluation of both youth and adults, defines in detail the professional qualifications required of those who diagnose and treat both adolescents and adults. We advise that decisions regarding the social transition of prepubertal youth are made with the assistance of a mental health professional or similarly experienced professional. We recommend against puberty blocking followed by gender-affirming hormone treatment of prepubertal children. Clinicians should inform pubertal children, adolescents, and adults seeking gender-confirming treatment of their options for fertility preservation. Prior to treatment, clinicians should evaluate the presence of medical conditions that may be worsened by hormone depletion and/or treatment. A multidisciplinary team, preferably composed of medical and mental health professionals, should monitor treatments. Clinicians evaluating transgender adults for endocrine treatment should confirm the diagnosis of persistent gender dysphoria/gender incongruence. Physicians should educate transgender persons regarding the time course of steroid-induced physical changes. Treatment should include periodic monitoring of hormone levels and metabolic parameters, as well as assessments of bone density and the impact upon prostate, gonads, and uterus. We also make recommendations for transgender persons who plan genital gender-affirming surgery.

Method of Development of Evidence-Based Clinical Practice Guidelines

The Clinical Guidelines Subcommittee (CGS) of the Endocrine Society deemed the diagnosis and treatment of individuals with GD/gender incongruence a priority area for revision and appointed a task force to formulate evidence-based recommendations. The task force followed the approach recommended by the Grading of Recommendations, Assessment, Development, and Evaluation group, an international group with expertise in the development and implementation of evidence-based guidelines (1). A detailed description of the grading scheme has been published elsewhere (2). The task force used the best available research evidence to develop the recommendations. The task force also used consistent language and graphical descriptions of both the strength of a recommendation and the quality of evidence. In terms of the strength of the recommendation, strong recommendations use the phrase "we recommend" and the number 1, and weak recommendations use the phrase "we suggest" and the number 2. Cross-filled circles indicate the quality of the evidence, such that ⊕○○○ denotes very low-quality evidence; ⊕⊕○○, low quality; ⊕⊕⊕○, moderate quality; and ⊕⊕⊕⊕, high quality. The task force has confidence that persons who receive care according to the strong recommendations will derive, on average, more benefit than harm. Weak recommendations require more careful consideration of the person's circumstances, values, and preferences to determine the best course of action. Linked to each recommendation is a description of the evidence and the

values that the task force considered in making the recommendation. In some instances, there are remarks in which the task force offers technical suggestions for testing conditions, dosing, and monitoring. These technical comments reflect the best available evidence applied to a typical person being treated. Often this evidence comes from the unsystematic observations of the task force and their preferences; therefore, one should consider these remarks as suggestions.

In this guideline, the task force made several statements to emphasize the importance of shared decision-making, general preventive care measures, and basic principles of the treatment of transgender persons. They labeled these “Ungraded Good Practice Statement.” Direct evidence for these statements was either unavailable or not systematically appraised and considered out of the scope of this guideline. The intention of these statements is to draw attention to these principles.

The Endocrine Society maintains a rigorous conflict-of-interest review process for developing clinical practice guidelines. All task force members must declare any potential conflicts of interest by completing a conflict-of-interest form. The CGS reviews all conflicts of interest before the Society’s Council approves the members to participate on the task force and periodically during the development of the guideline. All others participating in the guideline’s development must also disclose any conflicts of interest in the matter under study, and most of these participants must be without any conflicts of interest. The CGS and the task force have reviewed all disclosures for this guideline and resolved or managed all identified conflicts of interest.

Conflicts of interest are defined as remuneration in any amount from commercial interests; grants; research support; consulting fees; salary; ownership interests [*e.g.*, stocks and stock options (excluding diversified mutual funds)]; honoraria and other payments for participation in speakers’ bureaus, advisory boards, or boards of directors; and all other financial benefits. Completed forms are available through the Endocrine Society office.

The Endocrine Society provided the funding for this guideline; the task force received no funding or remuneration from commercial or other entities.

Commissioned Systematic Review

The task force commissioned two systematic reviews to support this guideline. The first one aimed to summarize the available evidence on the effect of sex steroid use in transgender individuals on lipids and cardiovascular outcomes. The review identified 29 eligible studies at moderate risk of bias. In transgender males (female to male), sex steroid therapy was associated with a statistically significant increase in serum triglycerides and low-density lipoprotein cholesterol levels. High-density lipoprotein cholesterol levels decreased significantly across all follow-up time periods. In transgender females (male to female), serum triglycerides were significantly higher without any changes in other parameters. Few myocardial infarction, stroke, venous thromboembolism (VTE), and death events were reported. These events were more frequent in transgender females. However, the

quality of the evidence was low. The second review summarized the available evidence regarding the effect of sex steroids on bone health in transgender individuals and identified 13 studies. In transgender males, there was no statistically significant difference in the lumbar spine, femoral neck, or total hip BMD at 12 and 24 months compared with baseline values before initiating masculinizing hormone therapy. In transgender females, there was a statistically significant increase in lumbar spine BMD at 12 months and 24 months compared with baseline values before initiation of feminizing hormone therapy. There was minimal information on fracture rates. The quality of evidence was also low.

Introduction

Throughout recorded history (in the absence of an endocrine disorder) some men and women have experienced confusion and anguish resulting from rigid, forced conformity to sexual dimorphism. In modern history, there have been numerous ongoing biological, psychological, cultural, political, and sociological debates over various aspects of gender variance. The 20th century marked the emergence of a social awakening for men and women with the belief that they are “trapped” in the wrong body (3). Magnus Hirschfeld and Harry Benjamin, among others, pioneered the medical responses to those who sought relief from and a resolution to their profound discomfort. Although the term transsexual became widely known after Benjamin wrote “The Transsexual Phenomenon” (4), it was Hirschfeld who coined the term “transsexual” in 1923 to describe people who want to live a life that corresponds with their experienced gender vs their designated gender (5). Magnus Hirschfeld (6) and others (4, 7) have described other types of trans phenomena besides transsexualism. These early researchers proposed that the gender identity of these people was located somewhere along a unidimensional continuum. This continuum ranged from all male through “something in between” to all female. Yet such a classification does not take into account that people may have gender identities outside this continuum. For instance, some experience themselves as having both a male and female gender identity, whereas others completely renounce any gender classification (8, 9). There are also reports of individuals experiencing a continuous and rapid involuntary alternation between a male and female identity (10) or men who do not experience themselves as men but do not want to live as women (11, 12). In some countries, (*e.g.*, Nepal, Bangladesh, and Australia), these nonmale or nonfemale genders are officially recognized (13). Specific treatment protocols, however, have not yet been developed for these groups.

Instead of the term transsexualism, the current classification system of the American Psychiatric Association uses the term gender dysphoria in its diagnosis of persons who are not satisfied with their designated gender (14). The current version of the World Health Organization's ICD-10 still uses the term transsexualism when diagnosing adolescents and adults. However, for the ICD-11, the World Health Organization has proposed using the term "gender incongruence" (15).

Treating persons with GD/gender incongruence (15) was previously limited to relatively ineffective elixirs or creams. However, more effective endocrinology-based treatments became possible with the availability of testosterone in 1935 and diethylstilbestrol in 1938. Reports of individuals with GD/gender incongruence who were treated with hormones and gender-affirming surgery appeared in the press during the second half of the 20th century. The Harry Benjamin International Gender Dysphoria Association was founded in September 1979 and is now called the World Professional Association for Transgender Health (WPATH). WPATH published its first Standards of Care in 1979. These standards have since been regularly updated, providing guidance for treating persons with GD/gender incongruence (16).

Prior to 1975, few peer-reviewed articles were published concerning endocrine treatment of transgender persons. Since then, more than two thousand articles about various aspects of transgender care have appeared.

It is the purpose of this guideline to make detailed recommendations and suggestions, based on existing medical literature and clinical experience, that will enable treating physicians to maximize benefit and minimize risk when caring for individuals diagnosed with GD/gender incongruence.

In the future, we need more rigorous evaluations of the effectiveness and safety of endocrine and surgical protocols. Specifically, endocrine treatment protocols for GD/gender incongruence should include the careful assessment of the following: (1) the effects of prolonged delay of puberty in adolescents on bone health, gonadal function, and the brain (including effects on cognitive, emotional, social, and sexual development); (2) the effects of treatment in adults on sex hormone levels; (3) the requirement for and the effects of progestins and other agents used to suppress endogenous sex steroids during treatment; and (4) the risks and benefits of gender-affirming hormone treatment in older transgender people.

To successfully establish and enact these protocols, a commitment of mental health and endocrine investigators is required to collaborate in long-term, large-scale

studies across countries that use the same diagnostic and inclusion criteria, medications, assay methods, and response assessment tools (e.g., the European Network for the Investigation of Gender Incongruence) (17, 18).

Terminology and its use vary and continue to evolve. Table 1 contains the definitions of terms as they are used throughout this guideline.

Biological Determinants of Gender Identity Development

One's self-awareness as male or female changes gradually during infant life and childhood. This process of cognitive and affective learning evolves with interactions with parents, peers, and environment. A fairly accurate timetable exists outlining the steps in this process (19). Normative psychological literature, however, does not address if and when gender identity becomes crystallized and what factors contribute to the development of a gender identity that is not congruent with the gender of rearing. Results of studies from a variety of biomedical disciplines—genetic, endocrine, and neuroanatomic—support the concept that gender identity and/or gender expression (20) likely reflect a complex interplay of biological, environmental, and cultural factors (21, 22).

With respect to endocrine considerations, studies have failed to find differences in circulating levels of sex steroids between transgender and nontransgender individuals (23). However, studies in individuals with a disorder/difference of sex development (DSD) have informed our understanding of the role that hormones may play in gender identity outcome, even though most persons with GD/gender incongruence do not have a DSD. For example, although most 46,XX adult individuals with virilizing congenital adrenal hyperplasia caused by mutations in *CYP21A2* reported a female gender identity, the prevalence of GD/gender incongruence was much greater in this group than in the general population without a DSD. This supports the concept that there is a role for prenatal/postnatal androgens in gender development (24–26), although some studies indicate that prenatal androgens are more likely to affect gender behavior and sexual orientation rather than gender identity *per se* (27, 28).

Researchers have made similar observations regarding the potential role of androgens in the development of gender identity in other individuals with DSD. For example, a review of two groups of 46,XY persons, each with androgen synthesis deficiencies and female raised, reported transgender male (female-to-male) gender role changes in 56% to 63% and 39% to 64% of patients, respectively (29). Also, in 46,XY female-raised individuals with cloacal

Table 1. Definitions of Terms Used in This Guideline

Biological sex, biological male or female: These terms refer to physical aspects of maleness and femaleness. As these may not be in line with each other (e.g., a person with XY chromosomes may have female-appearing genitalia), the terms biological sex and biological male or female are imprecise and should be avoided.

Cisgender: This means not transgender. An alternative way to describe individuals who are not transgender is “non-transgender people.”

Gender-affirming (hormone) treatment: See “gender reassignment”

Gender dysphoria: This is the distress and unease experienced if gender identity and designated gender are not completely congruent (see Table 2). In 2013, the American Psychiatric Association released the fifth edition of the DSM-5, which replaced “gender identity disorder” with “gender dysphoria” and changed the criteria for diagnosis.

Gender expression: This refers to external manifestations of gender, expressed through one’s name, pronouns, clothing, haircut, behavior, voice, or body characteristics. Typically, transgender people seek to make their gender expression align with their gender identity, rather than their designated gender.

Gender identity/experienced gender: This refers to one’s internal, deeply held sense of gender. For transgender people, their gender identity does not match their sex designated at birth. Most people have a gender identity of man or woman (or boy or girl). For some people, their gender identity does not fit neatly into one of those two choices. Unlike gender expression (see below), gender identity is not visible to others.

Gender identity disorder: This is the term used for GD/gender incongruence in previous versions of DSM (see “gender dysphoria”). The ICD-10 still uses the term for diagnosing child diagnoses, but the upcoming ICD-11 has proposed using “gender incongruence of childhood.”

Gender incongruence: This is an umbrella term used when the gender identity and/or gender expression differs from what is typically associated with the designated gender. Gender incongruence is also the proposed name of the gender identity–related diagnoses in ICD-11. Not all individuals with gender incongruence have gender dysphoria or seek treatment.

Gender variance: See “gender incongruence”

Gender reassignment: This refers to the treatment procedure for those who want to adapt their bodies to the experienced gender by means of hormones and/or surgery. This is also called gender-confirming or gender-affirming treatment.

Gender-reassignment surgery (gender-confirming/gender-affirming surgery): These terms refer only to the surgical part of gender-confirming/gender-affirming treatment.

Gender role: This refers to behaviors, attitudes, and personality traits that a society (in a given culture and historical period) designates as masculine or feminine and/or that society associates with or considers typical of the social role of men or women.

Sex designated at birth: This refers to sex assigned at birth, usually based on genital anatomy.

Sex: This refers to attributes that characterize biological maleness or femaleness. The best known attributes include the sex-determining genes, the sex chromosomes, the H-Y antigen, the gonads, sex hormones, internal and external genitalia, and secondary sex characteristics.

Sexual orientation: This term describes an individual’s enduring physical and emotional attraction to another person. Gender identity and sexual orientation are not the same. Irrespective of their gender identity, transgender people may be attracted to women (gynephilic), attracted to men (androphilic), bisexual, asexual, or queer.

Transgender: This is an umbrella term for people whose gender identity and/or gender expression differs from what is typically associated with their sex designated at birth. Not all transgender individuals seek treatment.

Transgender male (also: trans man, female-to-male, transgender male): This refers to individuals assigned female at birth but who identify and live as men.

Transgender woman (also: trans woman, male-to-female, transgender female): This refers to individuals assigned male at birth but who identify and live as women.

Transition: This refers to the process during which transgender persons change their physical, social, and/or legal characteristics consistent with the affirmed gender identity. Prepubertal children may choose to transition socially.

Transsexual: This is an older term that originated in the medical and psychological communities to refer to individuals who have permanently transitioned through medical interventions or desired to do so.

extrophy and penile agenesis, the occurrence of transgender male changes was significantly more prevalent than in the general population (30, 31). However, the fact that a high percentage of individuals with the same conditions did not change gender suggests that cultural factors may play a role as well.

With respect to genetics and gender identity, several studies have suggested heritability of GD/gender incongruence (32, 33). In particular, a study by Heylens *et al.* (33) demonstrated a 39.1% concordance rate for gender identity disorder (based on the DSM-IV criteria) in 23 monozygotic twin pairs but no concordance in 21 same-sex dizygotic or seven opposite-sex twin pairs. Although numerous investigators have sought to identify

specific genes associated with GD/gender incongruence, such studies have been inconsistent and without strong statistical significance (34–38).

Studies focusing on brain structure suggest that the brain phenotypes of people with GD/gender incongruence differ in various ways from control males and females, but that there is not a complete sex reversal in brain structures (39).

In summary, although there is much that is still unknown with respect to gender identity and its expression, compelling studies support the concept that biologic factors, in addition to environmental factors, contribute to this fundamental aspect of human development.

Natural History of Children With GD/Gender Incongruence

With current knowledge, we cannot predict the psychosexual outcome for any specific child. Prospective follow-up studies show that childhood GD/gender incongruence does not invariably persist into adolescence and adulthood (so-called “desisters”). Combining all outcome studies to date, the GD/gender incongruence of a minority of prepubertal children appears to persist in adolescence (20, 40). In adolescence, a significant number of these desisters identify as homosexual or bisexual. It may be that children who only showed some gender nonconforming characteristics have been included in the follow-up studies, because the DSM-IV text revision criteria for a diagnosis were rather broad. However, the persistence of GD/gender incongruence into adolescence is more likely if it had been extreme in childhood (41, 42). With the newer, stricter criteria of the DSM-5 (Table 2), persistence rates may well be different in future studies.

1.0 Evaluation of Youth and Adults

Gender-affirming treatment is a multidisciplinary effort. After evaluation, education, and diagnosis, treatment may include mental health care, hormone therapy, and/or surgical therapy. Together with an MHP, hormone-prescribing clinicians should examine the psychosocial impact of the potential changes on people’s lives, including mental health, friends, family, jobs, and their role in society. Transgender individuals should be encouraged to experience living in the new gender role and assess whether

this improves their quality of life. Although the focus of this guideline is gender-affirming hormone therapy, collaboration with appropriate professionals responsible for each aspect of treatment maximizes a successful outcome.

Diagnostic assessment and mental health care

GD/gender incongruence may be accompanied with psychological or psychiatric problems (43–51). It is therefore necessary that clinicians who prescribe hormones and are involved in diagnosis and psychosocial assessment meet the following criteria: (1) are competent in using the DSM and/or the ICD for diagnostic purposes, (2) are able to diagnose GD/gender incongruence and make a distinction between GD/gender incongruence and conditions that have similar features (*e.g.*, body dysmorphic disorder), (3) are trained in diagnosing psychiatric conditions, (4) undertake or refer for appropriate treatment, (5) are able to do a psychosocial assessment of the patient’s understanding, mental health, and social conditions that can impact gender-affirming hormone therapy, and (6) regularly attend relevant professional meetings.

Because of the psychological vulnerability of many individuals with GD/gender incongruence, it is important that mental health care is available before, during, and sometimes also after transitioning. For children and adolescents, an MHP who has training/experience in child and adolescent gender development (as well as child and adolescent psychopathology) should make the diagnosis, because assessing GD/gender incongruence in children and adolescents is often extremely complex.

During assessment, the clinician obtains information from the individual seeking gender-affirming treatment. In the case

Table 2. DSM-5 Criteria for Gender Dysphoria in Adolescents and Adults

- A. A marked incongruence between one’s experienced/expressed gender and natal gender of at least 6 mo in duration, as manifested by at least two of the following:
 1. A marked incongruence between one’s experienced/expressed gender and primary and/or secondary sex characteristics (or in young adolescents, the anticipated secondary sex characteristics)
 2. A strong desire to be rid of one’s primary and/or secondary sex characteristics because of a marked incongruence with one’s experienced/expressed gender (or in young adolescents, a desire to prevent the development of the anticipated secondary sex characteristics)
 3. A strong desire for the primary and/or secondary sex characteristics of the other gender
 4. A strong desire to be of the other gender (or some alternative gender different from one’s designated gender)
 5. A strong desire to be treated as the other gender (or some alternative gender different from one’s designated gender)
 6. A strong conviction that one has the typical feelings and reactions of the other gender (or some alternative gender different from one’s designated gender)
 - B. The condition is associated with clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- Specify if:
1. The condition exists with a disorder of sex development.
 2. The condition is posttransitional, in that the individual has transitioned to full-time living in the desired gender (with or without legalization of gender change) and has undergone (or is preparing to have) at least one sex-related medical procedure or treatment regimen—namely, regular sex hormone treatment or gender reassignment surgery confirming the desired gender (*e.g.*, penectomy, vaginoplasty in natal males; mastectomy or phalloplasty in natal females).

of adolescents, the clinician also obtains information from the parents or guardians regarding various aspects of the child's general and psychosexual development and current functioning. On the basis of this information, the clinician:

- decides whether the individual fulfills criteria for treatment (see Tables 2 and 3) for GD/gender incongruence (DSM-5) or transsexualism (DSM-5 and/or ICD-10);
- informs the individual about the possibilities and limitations of various kinds of treatment (hormonal/surgical and nonhormonal), and if medical treatment is desired, provides correct information to prevent unrealistically high expectations;
- assesses whether medical interventions may result in unfavorable psychological and social outcomes.

In cases in which severe psychopathology, circumstances, or both seriously interfere with the diagnostic work or make satisfactory treatment unlikely, clinicians should assist the adolescent in managing these other issues. Literature on postoperative regret suggests that besides poor quality of surgery, severe psychiatric comorbidity and lack of support may interfere with positive outcomes (52–56).

For adolescents, the diagnostic procedure usually includes a complete psychodiagnostic assessment (57) and an assessment of the decision-making capability of the youth. An evaluation to assess the family's ability to endure stress, give support, and deal with the complexities of the adolescent's situation should be part of the diagnostic phase (58).

Social transitioning

A change in gender expression and role (which may involve living part time or full time in another gender role that is consistent with one's gender identity) may test the person's resolve, the capacity to function in the affirmed gender, and the adequacy of social, economic, and psychological supports. It assists both the individual and the clinician in their judgments about how to proceed (16). During social transitioning, the person's feelings about the social transformation (including coping with the responses of others) is a major focus of the counseling. The optimal timing for social transitioning may differ between individuals. Sometimes people wait until they

start gender-affirming hormone treatment to make social transitioning easier, but individuals increasingly start social transitioning long before they receive medically supervised, gender-affirming hormone treatment.

Criteria

Adolescents and adults seeking gender-affirming hormone treatment and surgery should satisfy certain criteria before proceeding (16). Criteria for gender-affirming hormone therapy for adults are in Table 4, and criteria for gender-affirming hormone therapy for adolescents are in Table 5. Follow-up studies in adults meeting these criteria indicate a high satisfaction rate with treatment (59). However, the quality of evidence is usually low. A few follow-up studies on adolescents who fulfilled these criteria also indicated good treatment results (60–63).

Recommendations for Those Involved in the Gender-Affirming Hormone Treatment of Individuals With GD/Gender Incongruence

- 1.1. We advise that only trained MHPs who meet the following criteria should diagnose GD/gender incongruence in adults: (1) competence in using the DSM and/or the ICD for diagnostic purposes, (2) the ability to diagnose GD/gender incongruence and make a distinction between GD/gender incongruence and conditions that have similar features (*e.g.*, body dysmorphic disorder), (3) training in diagnosing psychiatric conditions, (4) the ability to undertake or refer for appropriate treatment, (5) the ability to psychosocially assess the person's understanding, mental health, and social conditions that can impact gender-affirming hormone therapy, and (6) a practice of regularly attending relevant professional meetings. (Ungraded Good Practice Statement)
- 1.2. We advise that only MHPs who meet the following criteria should diagnose GD/gender incongruence in children and adolescents: (1) training in child and adolescent developmental psychology and psychopathology, (2) competence in using the DSM and/or ICD for diagnostic

Table 3. ICD-10 Criteria for Transsexualism

Transsexualism (F64.0) has three criteria:

1. The desire to live and be accepted as a member of the opposite sex, usually accompanied by the wish to make his or her body as congruent as possible with the preferred sex through surgery and hormone treatments.
2. The transsexual identity has been present persistently for at least 2 y.
3. The disorder is not a symptom of another mental disorder or a genetic, DSD, or chromosomal abnormality.

Table 4. Criteria for Gender-Affirming Hormone Therapy for Adults

1. Persistent, well-documented gender dysphoria/gender incongruence
2. The capacity to make a fully informed decision and to consent for treatment
3. The age of majority in a given country (if younger, follow the criteria for adolescents)
4. Mental health concerns, if present, must be reasonably well controlled

Reproduced from World Professional Association for Transgender Health (16).

purposes, (3) the ability to make a distinction between GD/gender incongruence and conditions that have similar features (e.g., body dysmorphic disorder), (4) training in diagnosing psychiatric conditions, (5) the ability to undertake or refer for appropriate treatment, (6) the ability to psychosocially assess the person's understanding and social conditions that can impact gender-affirming hormone therapy, (7) a practice of regularly attending relevant professional meetings, and (8) knowledge of the criteria for puberty blocking and gender-affirming hormone treatment in adolescents. (Ungraded Good Practice Statement)

Evidence

Individuals with gender identity issues may have psychological or psychiatric problems (43–48, 50, 51, 64, 65). It is therefore necessary that clinicians making the diagnosis are able to make a distinction between GD/gender incongruence and conditions that have similar features. Examples of conditions with similar features are body dysmorphic disorder, body identity integrity disorder (a condition in which individuals have a sense that their anatomical configuration as an able-bodied person is somehow wrong or inappropriate) (66), or certain forms of eunuchism (in which a person is preoccupied with or engages in castration and/or penectomy for

Table 5. Criteria for Gender-Affirming Hormone Therapy for Adolescents

Adolescents are eligible for GnRH agonist treatment if:

1. A qualified MHP has confirmed that:
 - the adolescent has demonstrated a long-lasting and intense pattern of gender nonconformity or gender dysphoria (whether suppressed or expressed),
 - gender dysphoria worsened with the onset of puberty,
 - any coexisting psychological, medical, or social problems that could interfere with treatment (e.g., that may compromise treatment adherence) have been addressed, such that the adolescent's situation and functioning are stable enough to start treatment,
 - the adolescent has sufficient mental capacity to give informed consent to this (reversible) treatment,
2. And the adolescent:
 - has been informed of the effects and side effects of treatment (including potential loss of fertility if the individual subsequently continues with sex hormone treatment) and options to preserve fertility,
 - has given informed consent and (particularly when the adolescent has not reached the age of legal medical consent, depending on applicable legislation) the parents or other caretakers or guardians have consented to the treatment and are involved in supporting the adolescent throughout the treatment process,
3. And a pediatric endocrinologist or other clinician experienced in pubertal assessment:
 - agrees with the indication for GnRH agonist treatment,
 - has confirmed that puberty has started in the adolescent (Tanner stage \geq G2/B2),
 - has confirmed that there are no medical contraindications to GnRH agonist treatment.

Adolescents are eligible for subsequent sex hormone treatment if:

1. A qualified MHP has confirmed:
 - the persistence of gender dysphoria,
 - any coexisting psychological, medical, or social problems that could interfere with treatment (e.g., that may compromise treatment adherence) have been addressed, such that the adolescent's situation and functioning are stable enough to start sex hormone treatment,
 - the adolescent has sufficient mental capacity (which most adolescents have by age 16 years) to estimate the consequences of this (partly) irreversible treatment, weigh the benefits and risks, and give informed consent to this (partly) irreversible treatment,
2. And the adolescent:
 - has been informed of the (irreversible) effects and side effects of treatment (including potential loss of fertility and options to preserve fertility),
 - has given informed consent and (particularly when the adolescent has not reached the age of legal medical consent, depending on applicable legislation) the parents or other caretakers or guardians have consented to the treatment and are involved in supporting the adolescent throughout the treatment process,
3. And a pediatric endocrinologist or other clinician experienced in pubertal induction:
 - agrees with the indication for sex hormone treatment,
 - has confirmed that there are no medical contraindications to sex hormone treatment.

Reproduced from World Professional Association for Transgender Health (16).

reasons that are not gender identity related) (11). Clinicians should also be able to diagnose psychiatric conditions accurately and ensure that these conditions are treated appropriately, particularly when the conditions may complicate treatment, affect the outcome of gender-affirming treatment, or be affected by hormone use.

Values and preferences

The task force placed a very high value on avoiding harm from hormone treatment in individuals who have conditions other than GD/gender incongruence and who may not benefit from the physical changes associated with this treatment and placed a low value on any potential benefit these persons believe they may derive from hormone treatment. This justifies the good practice statement.

- 1.3. We advise that decisions regarding the social transition of prepubertal youths with GD/gender incongruence are made with the assistance of an MHP or another experienced professional. (Ungraded Good Practice Statement).
- 1.4. We recommend against puberty blocking and gender-affirming hormone treatment in prepubertal children with GD/gender incongruence. (1 ⊕⊕○○)

Evidence

In most children diagnosed with GD/gender incongruence, it did not persist into adolescence. The percentages differed among studies, probably dependent on which version of the DSM clinicians used, the patient's age, the recruitment criteria, and perhaps cultural factors. However, the large majority (about 85%) of prepubertal children with a childhood diagnosis did not remain GD/gender incongruent in adolescence (20). If children have completely socially transitioned, they may have great difficulty in returning to the original gender role upon entering puberty (40). Social transition is associated with the persistence of GD/gender incongruence as a child progresses into adolescence. It may be that the presence of GD/gender incongruence in prepubertal children is the earliest sign that a child is destined to be transgender as an adolescent/adult (20). However, social transition (in addition to GD/gender incongruence) has been found to contribute to the likelihood of persistence.

This recommendation, however, does not imply that children should be discouraged from showing gender-variant behaviors or should be punished for exhibiting such behaviors. In individual cases, an early complete social transition may result in a more favorable outcome, but there are currently no criteria to identify the

GD/gender-incongruent children to whom this applies. At the present time, clinical experience suggests that persistence of GD/gender incongruence can only be reliably assessed after the first signs of puberty.

Values and preferences

The task force placed a high value on avoiding harm with gender-affirming hormone therapy in prepubertal children with GD/gender incongruence. This justifies the strong recommendation in the face of low-quality evidence.

- 1.5. We recommend that clinicians inform and counsel all individuals seeking gender-affirming medical treatment regarding options for fertility preservation prior to initiating puberty suppression in adolescents and prior to treating with hormonal therapy of the affirmed gender in both adolescents and adults. (1 ⊕⊕⊕○)

Remarks

Persons considering hormone use for gender affirmation need adequate information about this treatment in general and about fertility effects of hormone treatment in particular to make an informed and balanced decision (67, 68). Because young adolescents may not feel qualified to make decisions about fertility and may not fully understand the potential effects of hormonal interventions, consent and protocol education should include parents, the referring MHP(s), and other members of the adolescent's support group. To our knowledge, there are no formally evaluated decision aids available to assist in the discussion and decision regarding the future fertility of adolescents or adults beginning gender-affirming treatment.

Treating early pubertal youth with GnRH analogs will temporarily impair spermatogenesis and oocyte maturation. Given that an increasing number of transgender youth want to preserve fertility potential, delaying or temporarily discontinuing GnRH analogs to promote gamete maturation is an option. This option is often not preferred, because mature sperm production is associated with later stages of puberty and with the significant development of secondary sex characteristics.

For those designated male at birth with GD/gender incongruence and who are in early puberty, sperm production and the development of the reproductive tract are insufficient for the cryopreservation of sperm. However, prolonged pubertal suppression using GnRH analogs is reversible and clinicians should inform these individuals that sperm production can be initiated following prolonged gonadotropin suppression. This can be accomplished by spontaneous gonadotropin recovery after

cessation of GnRH analogs or by gonadotropin treatment and will probably be associated with physical manifestations of testosterone production, as stated above. Note that there are no data in this population concerning the time required for sufficient spermatogenesis to collect enough sperm for later fertility. In males treated for precocious puberty, spermarche was reported 0.7 to 3 years after cessation of GnRH analogs (69). In adult men with gonadotropin deficiency, sperm are noted in seminal fluid by 6 to 12 months of gonadotropin treatment. However, sperm numbers when partners of these patients conceive are far below the “normal range” (70, 71).

In girls, no studies have reported long-term, adverse effects of pubertal suppression on ovarian function after treatment cessation (72, 73). Clinicians should inform adolescents that no data are available regarding either time to spontaneous ovulation after cessation of GnRH analogs or the response to ovulation induction following prolonged gonadotropin suppression.

In males with GD/gender incongruence, when medical treatment is started in a later phase of puberty or in adulthood, spermatogenesis is sufficient for cryopreservation and storage of sperm. *In vitro* spermatogenesis is currently under investigation. Restoration of spermatogenesis after prolonged estrogen treatment has not been studied.

In females with GD/gender incongruence, the effect of prolonged treatment with exogenous testosterone on ovarian function is uncertain. There have been reports of an increased incidence of polycystic ovaries in transgender males, both prior to and as a result of androgen treatment (74–77), although these reports were not confirmed by others (78). Pregnancy has been reported in transgender males who have had prolonged androgen treatment and have discontinued testosterone but have not had genital surgery (79, 80). A reproductive endocrine gynecologist can counsel patients before gender-affirming hormone treatment or surgery regarding potential fertility options (81). Techniques for cryopreservation of oocytes, embryos, and ovarian tissue continue to improve, and oocyte maturation of immature tissue is being studied (82).

2.0 Treatment of Adolescents

During the past decade, clinicians have progressively acknowledged the suffering of young adolescents with GD/gender incongruence. In some forms of GD/gender incongruence, psychological interventions may be useful and sufficient. However, for many adolescents with GD/gender incongruence, the pubertal physical changes are unbearable. As early medical intervention may prevent

psychological harm, various clinics have decided to start treating young adolescents with GD/gender incongruence with puberty-suppressing medication (a GnRH analog). As compared with starting gender-affirming treatment long after the first phases of puberty, a benefit of pubertal suppression at early puberty may be a better psychological and physical outcome.

In girls, the first physical sign of puberty is the budding of the breasts followed by an increase in breast and fat tissue. Breast development is also associated with the pubertal growth spurt, and menarche occurs ~2 years later. In boys, the first physical change is testicular growth. A testicular volume ≥ 4 mL is seen as consistent with the initiation of physical puberty. At the beginning of puberty, estradiol and testosterone levels are still low and are best measured in the early morning with an ultrasensitive assay. From a testicular volume of 10 mL, daytime testosterone levels increase, leading to virilization (83). Note that pubic hair and/or axillary hair/odor may not reflect the onset of gonadarche; instead, it may reflect adrenarche alone.

- 2.1. We suggest that adolescents who meet diagnostic criteria for GD/gender incongruence, fulfill criteria for treatment (Table 5), and are requesting treatment should initially undergo treatment to suppress pubertal development. (2 ⊕⊕○○)
- 2.2. We suggest that clinicians begin pubertal hormone suppression after girls and boys first exhibit physical changes of puberty (Tanner stages G2/B2). (2 ⊕⊕○○)

Evidence

Pubertal suppression can expand the diagnostic phase by a long period, giving the subject more time to explore options and to live in the experienced gender before making a decision to proceed with gender-affirming sex hormone treatments and/or surgery, some of which is irreversible (84, 85). Pubertal suppression is fully reversible, enabling full pubertal development in the natal gender, after cessation of treatment, if appropriate. The experience of full endogenous puberty is an undesirable condition for the GD/gender-incongruent individual and may seriously interfere with healthy psychological functioning and well-being. Treating GD/gender-incongruent adolescents entering puberty with GnRH analogs has been shown to improve psychological functioning in several domains (86).

Another reason to start blocking pubertal hormones early in puberty is that the physical outcome is improved compared with initiating physical transition after puberty has been completed (60, 62). Looking like a man or woman when living as the opposite sex creates difficult

barriers with enormous life-long disadvantages. We therefore advise starting suppression in early puberty to prevent the irreversible development of undesirable secondary sex characteristics. However, adolescents with GD/gender incongruence should experience the first changes of their endogenous spontaneous puberty, because their emotional reaction to these first physical changes has diagnostic value in establishing the persistence of GD/gender incongruence (85). Thus, Tanner stage 2 is the optimal time to start pubertal suppression. However, pubertal suppression treatment in early puberty will limit the growth of the penis and scrotum, which will have a potential effect on future surgical treatments (87).

Clinicians can also use pubertal suppression in adolescents in later pubertal stages to stop menses in transgender males and prevent facial hair growth in transgender females. However, in contrast to the effects in early pubertal adolescents, physical sex characteristics (such as more advanced breast development in transgender boys and lowering of the voice and outgrowth of the jaw and brow in transgender girls) are not reversible.

Values and preferences

These recommendations place a high value on avoiding an unsatisfactory physical outcome when secondary sex characteristics have become manifest and irreversible, a higher value on psychological well-being, and a lower value on avoiding potential harm from early pubertal suppression.

Remarks

Table 6 lists the Tanner stages of breast and male genital development. Careful documentation of hallmarks of pubertal development will ensure precise timing when initiating pubertal suppression once puberty has started. Clinicians can use pubertal LH and sex steroid levels to confirm that puberty has progressed sufficiently before starting pubertal suppression (88). Reference

ranges for sex steroids by Tanner stage may vary depending on the assay used. Ultrasensitive sex steroid and gonadotropin assays will help clinicians document early pubertal changes.

Irreversible and, for GD/gender-incongruent adolescents, undesirable sex characteristics in female puberty are breasts, female body habitus, and, in some cases, relative short stature. In male puberty, they are a prominent Adam's apple; low voice; male bone configuration, such as a large jaw, big feet and hands, and tall stature; and male hair pattern on the face and extremities.

- 2.3. We recommend that, where indicated, GnRH analogues are used to suppress pubertal hormones. (1 | ⊕ ⊕ ⊕ ⊕)

Evidence

Clinicians can suppress pubertal development and gonadal function most effectively via gonadotropin suppression using GnRH analogs. GnRH analogs are long-acting agonists that suppress gonadotropins by GnRH receptor desensitization after an initial increase of gonadotropins during ~10 days after the first and (to a lesser degree) the second injection (89). Antagonists immediately suppress pituitary gonadotropin secretion (90, 91). Long-acting GnRH analogs are the currently preferred treatment option. Clinicians may consider long-acting GnRH antagonists when evidence on their safety and efficacy in adolescents becomes available.

During GnRH analog treatment, slight development of secondary sex characteristics may regress, and in a later phase of pubertal development, it will stop. In girls, breast tissue will become atrophic, and menses will stop. In boys, virilization will stop, and testicular volume may decrease (92).

An advantage of using GnRH analogs is the reversibility of the intervention. If, after extensive exploration of his/her transition wish, the individual no longer desires transition, they can discontinue pubertal suppression. In subjects with

Table 6. Tanner Stages of Breast Development and Male External Genitalia

The description of Tanner stages for breast development:

1. Prepubertal
2. Breast and papilla elevated as small mound; areolar diameter increased
3. Breast and areola enlarged, no contour separation
4. Areola and papilla form secondary mound
5. Mature; nipple projects, areola part of general breast contour

For penis and testes:

1. Prepubertal, testicular volume <4 mL
2. Slight enlargement of penis; enlarged scrotum, pink, texture altered, testes 4–6 mL
3. Penis longer, testes larger (8–12 mL)
4. Penis and glans larger, including increase in breadth; testes larger (12–15 mL), scrotum dark
5. Penis adult size; testicular volume > 15 mL

Adapted from Lawrence (56).

precocious puberty, spontaneous pubertal development has been shown to resume after patients discontinue taking GnRH analogs (93).

Recommendations 2.1 to 2.3 are supported by a prospective follow-up study from The Netherlands. This report assessed mental health outcomes in 55 transgender adolescents/young adults (22 transgender females and 33 transgender males) at three time points: (1) before the start of GnRH agonist (average age of 14.8 years at start of treatment), (2) at initiation of gender-affirming hormones (average age of 16.7 years at start of treatment), and (3) 1 year after “gender-reassignment surgery” (average age of 20.7 years) (63). Despite a decrease in depression and an improvement in general mental health functioning, GD/gender incongruence persisted through pubertal suppression, as previously reported (86). However, following sex hormone treatment and gender-reassignment surgery, GD/gender incongruence was resolved and psychological functioning steadily improved (63). Furthermore, well-being was similar to or better than that reported by age-matched young adults from the general population, and none of the study participants regretted treatment. This study represents the first long-term follow-up of individuals managed according to currently existing clinical practice guidelines for transgender youth, and it underscores the benefit of the multidisciplinary approach pioneered in The Netherlands; however, further studies are needed.

Side effects

The primary risks of pubertal suppression in GD/gender-incongruent adolescents may include adverse effects on bone mineralization (which can theoretically be reversed with sex hormone treatment), compromised fertility if the person subsequently is treated with sex hormones, and unknown effects on brain development. Few data are available on the effect of GnRH analogs on BMD in adolescents with GD/gender incongruence. Initial data in GD/gender-incongruent subjects demonstrated no change of absolute areal BMD during 2 years of GnRH analog therapy but a decrease in BMD *z* scores (85). A recent study also suggested suboptimal bone mineral accrual during GnRH analog treatment. The study reported a decrease in areal BMD *z* scores and of bone mineral apparent density *z* scores (which takes the size of the bone into account) in 19 transgender males treated with GnRH analogs from a mean age of 15.0 years (standard deviation = 2.0 years) for a median duration of 1.5 years (0.3 to 5.2 years) and in 15 transgender females treated from 14.9 (± 1.9) years for 1.3 years (0.5 to 3.8 years), although not all changes were statistically significant (94). There was incomplete catch-up at age 22 years after sex hormone treatment from age 16.6 (± 1.4)

years for a median duration of 5.8 years (3.0 to 8.0 years) in transgender females and from age 16.4 (± 2.3) years for 5.4 years (2.8 to 7.8 years) in transgender males. Little is known about more prolonged use of GnRH analogs. Researchers reported normal BMD *z* scores at age 35 years in one individual who used GnRH analogs from age 13.7 years until age 18.6 years before initiating sex hormone treatment (65).

Additional data are available from individuals with late puberty or GnRH analog treatment of other indications. Some studies reported that men with constitutionally delayed puberty have decreased BMD in adulthood (95). However, other studies reported that these men have normal BMD (96, 97). Treating adults with GnRH analogs results in a decrease of BMD (98). In children with central precocious puberty, treatment with GnRH analogs has been found to result in a decrease of BMD during treatment by some (99) but not others (100). Studies have reported normal BMD after discontinuing therapy (69, 72, 73, 101, 102). In adolescents treated with growth hormone who are small for gestational age and have normal pubertal timing, 2-year GnRH analog treatments did not adversely affect BMD (103). Calcium supplementation may be beneficial in optimizing bone health in GnRH analog–treated individuals (104). There are no studies of vitamin D supplementation in this context, but clinicians should offer supplements to vitamin D–deficient adolescents. Physical activity, especially during growth, is important for bone mass in healthy individuals (103) and is therefore likely to be beneficial for bone health in GnRH analog–treated subjects.

GnRH analogs did not induce a change in body mass index standard deviation score in GD/gender-incongruent adolescents (94) but caused an increase in fat mass and decrease in lean body mass percentage (92). Studies in girls treated for precocious puberty also reported a stable body mass index standard deviation score during treatment (72) and body mass index and body composition comparable to controls after treatment (73).

Arterial hypertension has been reported as an adverse effect in a few girls treated with GnRH analogs for precocious/early puberty (105, 106). Blood pressure monitoring before and during treatment is recommended.

Individuals may also experience hot flashes, fatigue, and mood alterations as a consequence of pubertal suppression. There is no consensus on treatment of these side effects in this context.

It is recommended that any use of pubertal blockers (and subsequent use of sex hormones, as detailed below) include a discussion about implications for fertility (see recommendation 1.3). Transgender adolescents may

want to preserve fertility, which may be otherwise compromised if puberty is suppressed at an early stage and the individual completes phenotypic transition with the use of sex hormones.

Limited data are available regarding the effects of GnRH analogs on brain development. A single cross-sectional study demonstrated no compromise of executive function (107), but animal data suggest there may be an effect of GnRH analogs on cognitive function (108).

Values and preferences

Our recommendation of GnRH analogs places a higher value on the superior efficacy, safety, and reversibility of the pubertal hormone suppression achieved (as compared with the alternatives) and a relatively lower value on limiting the cost of therapy. Of the available alternatives, depot and oral progestin preparations are effective. Experience with this treatment dates back prior to the emergence of GnRH analogs for treating precocious puberty in papers from the 1960s and early 1970s (109–112). These compounds are usually safe, but some side effects have been reported (113–115). Only two recent studies involved transgender youth (116, 117). One of these studies described the use of oral lynestrenol monotherapy followed by the addition of testosterone treatment in transgender boys who were at Tanner stage B4 or further at the start of treatment (117). They found lynestrenol safe, but gonadotropins were not fully suppressed. The study reported metrorrhagia in approximately half of the individuals, mainly in the first 6 months. Acne, headache, hot flashes, and fatigue were other frequent side effects. Another progestin that has been studied in the United States is medroxyprogesterone. This agent is not as effective as GnRH analogs in lowering endogenous sex hormones either and may be associated with other side effects (116). Progestin preparations may be an acceptable treatment for persons without access to GnRH analogs or with a needle phobia. If GnRH analog treatment is not available (insurance denial, prohibitive cost, or other reasons), postpubertal, transgender female adolescents may be treated with an antiandrogen that directly suppresses androgen synthesis or action (see adult section).

Remarks

Measurements of gonadotropin and sex steroid levels give precise information about gonadal axis suppression, although there is insufficient evidence for any specific short-term monitoring scheme in children treated with GnRH analogs (88). If the gonadal axis is not completely suppressed—as evidenced by (for example) menses, erections, or progressive hair growth—the interval of GnRH analog treatment can be shortened or the dose increased. During treatment, adolescents should be monitored for negative effects of delaying puberty, including a halted growth spurt and impaired bone mineral accretion. Table 7 illustrates a suggested clinical protocol.

Anthropometric measurements and X-rays of the left hand to monitor bone age are informative for evaluating growth. To assess BMD, clinicians can perform dual-energy X-ray absorptiometry scans.

- 2.4. In adolescents who request sex hormone treatment (given this is a partly irreversible treatment), we recommend initiating treatment using a gradually increasing dose schedule (see Table 8) after a multidisciplinary team of medical and MHPs has confirmed the persistence of GD/gender incongruence and sufficient mental capacity to give informed consent, which most adolescents have by age 16 years (Table 5). (1 ⊕ ⊕ ⊕ ⊕)
- 2.5. We recognize that there may be compelling reasons to initiate sex hormone treatment prior to the age of 16 years in some adolescents with GD/gender incongruence, even though there are minimal published studies of gender-affirming hormone treatments administered before age 13.5 to 14 years. As with the care of adolescents ≥ 16 years of age, we recommend that an expert multidisciplinary team of medical and MHPs manage this treatment. (1 ⊕ ⊕ ⊕ ⊕)
- 2.6. We suggest monitoring clinical pubertal development every 3 to 6 months and laboratory parameters every 6 to 12 months during sex hormone treatment (Table 9). (2 ⊕ ⊕ ⊕ ⊕)

Table 7. Baseline and Follow-Up Protocol During Suppression of Puberty

Every 3–6 mo	Anthropometry: height, weight, sitting height, blood pressure, Tanner stages
Every 6–12 mo	Laboratory: LH, FSH, E2/T, 25OH vitamin D
Every 1–2 y	Bone density using DXA Bone age on X-ray of the left hand (if clinically indicated)

Adapted from Hembree *et al.* (118).

Abbreviations: DXA, dual-energy X-ray absorptiometry; E2, estradiol; FSH, follicle stimulating hormone; LH, luteinizing hormone; T, testosterone;

Table 8. Protocol Induction of Puberty

Induction of female puberty with oral 17 β -estradiol, increasing the dose every 6 mo:

5 μ g/kg/d

10 μ g/kg/d

15 μ g/kg/d

20 μ g/kg/d

Adult dose = 2–6 mg/d

In postpubertal transgender female adolescents, the dose of 17 β -estradiol can be increased more rapidly:

1 mg/d for 6 mo

2 mg/d

Induction of female puberty with transdermal 17 β -estradiol, increasing the dose every 6 mo (new patch is placed every 3.5 d):

6.25–12.5 μ g/24 h (cut 25- μ g patch into quarters, then halves)

25 μ g/24 h

37.5 μ g/24 h

Adult dose = 50–200 μ g/24 h

For alternatives once at adult dose, see Table 11.

Adjust maintenance dose to mimic physiological estradiol levels (see Table 15).

Induction of male puberty with testosterone esters increasing the dose every 6 mo (IM or SC):

25 mg/m²/2 wk (or alternatively, half this dose weekly, or double the dose every 4 wk)

50 mg/m²/2 wk

75 mg/m²/2 wk

100 mg/m²/2 wk

Adult dose = 100–200 mg every 2 wk

In postpubertal transgender male adolescents the dose of testosterone esters can be increased more rapidly:

75 mg/2 wk for 6 mo

125 mg/2 wk

For alternatives once at adult dose, see Table 11.

Adjust maintenance dose to mimic physiological testosterone levels (see Table 14).

Adapted from Hembree et al. (118).

Abbreviations: IM, intramuscularly; SC, subcutaneously.

Evidence

Adolescents develop competence in decision making at their own pace. Ideally, the supervising medical professionals should individually assess this competence, although no objective tools to make such an assessment are currently available.

Many adolescents have achieved a reasonable level of competence by age 15 to 16 years (119), and in many countries 16-year-olds are legally competent with regard to medical decision making (120). However, others believe that although some capacities are generally achieved before age 16 years, other abilities (such as good risk

assessment) do not develop until well after 18 years (121). They suggest that health care procedures should be divided along a matrix of relative risk, so that younger adolescents can be allowed to decide about low-risk procedures, such as most diagnostic tests and common therapies, but not about high-risk procedures, such as most surgical procedures (121).

Currently available data from transgender adolescents support treatment with sex hormones starting at age 16 years (63, 122). However, some patients may incur potential risks by waiting until age 16 years. These include the potential risk to bone health if puberty is suppressed

Table 9. Baseline and Follow-up Protocol During Induction of Puberty

Every 3–6 mo

- Anthropometry: height, weight, sitting height, blood pressure, Tanner stages

Every 6–12 mo

- In transgender males: hemoglobin/hematocrit, lipids, testosterone, 25OH vitamin D

- In transgender females: prolactin, estradiol, 25OH vitamin D

Every 1–2 y

- BMD using DXA

- Bone age on X-ray of the left hand (if clinically indicated)

BMD should be monitored into adulthood (until the age of 25–30 y or until peak bone mass has been reached).

For recommendations on monitoring once pubertal induction has been completed, see Tables 14 and 15.

Adapted from Hembree et al. (118).

Abbreviation: DXA, dual-energy X-ray absorptiometry.

for 6 to 7 years before initiating sex hormones (*e.g.*, if someone reached Tanner stage 2 at age 9-10 years old). Additionally, there may be concerns about inappropriate height and potential harm to mental health (emotional and social isolation) if initiation of secondary sex characteristics must wait until the person has reached 16 years of age. However, only minimal data supporting earlier use of gender-affirming hormones in transgender adolescents currently exist (63). Clearly, long-term studies are needed to determine the optimal age of sex hormone treatment in GD/gender-incongruent adolescents.

The MHP who has followed the adolescent during GnRH analog treatment plays an essential role in assessing whether the adolescent is eligible to start sex hormone therapy and capable of consenting to this treatment (Table 5). Support of the family/environment is essential. Prior to the start of sex hormones, clinicians should discuss the implications for fertility (see recommendation 1.5). Throughout pubertal induction, an MHP and a pediatric endocrinologist (or other clinician competent in the evaluation and induction of pubertal development) should monitor the adolescent. In addition to monitoring therapy, it is also important to pay attention to general adolescent health issues, including healthy life style choices, such as not smoking, contraception, and appropriate vaccinations (*e.g.*, human papillomavirus).

For the induction of puberty, clinicians can use a similar dose scheme for hypogonadal adolescents with GD/gender incongruence as they use in other individuals with hypogonadism, carefully monitoring for desired and undesired effects (Table 8). In transgender female adolescents, transdermal 17β -estradiol may be an alternative for oral 17β -estradiol. It is increasingly used for pubertal induction in hypogonadal females. However, the absence of low-dose estrogen patches may be a problem. As a result, individuals may need to cut patches to size themselves to achieve appropriate dosing (123). In transgender male adolescents, clinicians can give testosterone injections intramuscularly or subcutaneously (124, 125).

When puberty is initiated with a gradually increasing schedule of sex steroid doses, the initial levels will not be high enough to suppress endogenous sex steroid secretion. Gonadotropin secretion and endogenous production of testosterone may resume and interfere with the effectiveness of estrogen treatment, in transgender female adolescents (126, 127). Therefore, continuation of GnRH analog treatment is advised until gonadectomy. Given that GD/gender-incongruent adolescents may opt not to have gonadectomy, long-term studies are necessary to examine the potential risks of prolonged GnRH analog treatment. Alternatively, in transgender male adolescents, GnRH analog treatment can be discontinued once an

adult dose of testosterone has been reached and the individual is well virilized. If uterine bleeding occurs, a progestin can be added. However, the combined use of a GnRH analog (for ovarian suppression) and testosterone may enable phenotypic transition with a lower dose of testosterone in comparison with testosterone alone. If there is a wish or need to discontinue GnRH analog treatment in transgender female adolescents, they may be treated with an antiandrogen that directly suppresses androgen synthesis or action (see section 3.0 "Hormonal Therapy for Transgender Adults").

Values and preferences

The recommendation to initiate pubertal induction only when the individual has sufficient mental capacity (roughly age 16 years) to give informed consent for this partly irreversible treatment places a higher value on the ability of the adolescent to fully understand and oversee the partially irreversible consequences of sex hormone treatment and to give informed consent. It places a lower value on the possible negative effects of delayed puberty. We may not currently have the means to weigh adequately the potential benefits of waiting until around age 16 years to initiate sex hormones vs the potential risks/harm to BMD and the sense of social isolation from having the timing of puberty be so out of sync with peers (128).

Remarks

Before starting sex hormone treatment, effects on fertility and options for fertility preservation should be discussed. Adult height may be a concern in transgender adolescents. In a transgender female adolescent, clinicians may consider higher doses of estrogen or a more rapid tempo of dose escalation during pubertal induction. There are no established treatments yet to augment adult height in a transgender male adolescent with open epiphyses during pubertal induction. It is not uncommon for transgender adolescents to present for clinical services after having completed or nearly completed puberty. In such cases, induction of puberty with sex hormones can be done more rapidly (see Table 8). Additionally, an adult dose of testosterone in transgender male adolescents may suffice to suppress the gonadal axis without the need to use a separate agent. At the appropriate time, the multidisciplinary team should adequately prepare the adolescent for transition to adult care.

3.0 Hormonal Therapy for Transgender Adults

The two major goals of hormonal therapy are (1) to reduce endogenous sex hormone levels, and thus reduce

the secondary sex characteristics of the individual's designated gender, and (2) to replace endogenous sex hormone levels consistent with the individual's gender identity by using the principles of hormone replacement treatment of hypogonadal patients. The timing of these two goals and the age at which to begin treatment with the sex hormones of the chosen gender is codetermined in collaboration with both the person pursuing transition and the health care providers. The treatment team should include a medical provider knowledgeable in transgender hormone therapy, an MHP knowledgeable in GD/gender incongruence and the mental health concerns of transition, and a primary care provider able to provide care appropriate for transgender individuals. The physical changes induced by this sex hormone transition are usually accompanied by an improvement in mental well-being (129, 130).

- 3.1. We recommend that clinicians confirm the diagnostic criteria of GD/gender incongruence and the criteria for the endocrine phase of gender transition before beginning treatment. (1 ⊕⊕⊕○)
- 3.2. We recommend that clinicians evaluate and address medical conditions that can be exacerbated by hormone depletion and treatment with sex hormones of the affirmed gender before beginning treatment (Table 10). (1 ⊕⊕⊕○)
- 3.3. We suggest that clinicians measure hormone levels during treatment to ensure that endogenous sex steroids are suppressed and administered sex steroids are maintained in the normal physiologic range for the affirmed gender. (2 ⊕⊕○○)

Evidence

It is the responsibility of the treating clinician to confirm that the person fulfills criteria for treatment. The treating clinician should become familiar with the terms and criteria presented in Tables 1–5 and take a thorough history from the patient in collaboration with the other members of the treatment team. The treating clinician must ensure that the desire for transition is appropriate; the consequences, risks, and benefits of treatment are well understood; and the desire for transition persists. They also need to discuss fertility preservation options (see recommendation 1.3) (67, 68).

Transgender males

Clinical studies have demonstrated the efficacy of several different androgen preparations to induce masculinization in transgender males (Appendix A) (113, 114, 131–134). Regimens to change secondary sex characteristics follow the general principle of hormone replacement treatment of male hypogonadism (135). Clinicians can use either parenteral or transdermal preparations to achieve testosterone values in the normal male range (this is dependent on the specific assay, but is typically 320 to 1000 ng/dL) (Table 11) (136). Sustained supraphysiologic levels of testosterone increase the risk of adverse reactions (see section 4.0 “Adverse Outcome Prevention and Long-Term Care”) and should be avoided.

Similar to androgen therapy in hypogonadal men, testosterone treatment in transgender males results in increased muscle mass and decreased fat mass, increased facial hair and acne, male pattern baldness in those genetically predisposed, and increased sexual desire (137).

Table 10. Medical Risks Associated With Sex Hormone Therapy

Transgender female: estrogen

Very high risk of adverse outcomes:

- Thromboembolic disease

Moderate risk of adverse outcomes:

- Macroprolactinoma
- Breast cancer
- Coronary artery disease
- Cerebrovascular disease
- Cholelithiasis
- Hypertriglyceridemia

Transgender male: testosterone

Very high risk of adverse outcomes:

- Erythrocytosis (hematocrit > 50%)

Moderate risk of adverse outcomes:

- Severe liver dysfunction (transaminases > threefold upper limit of normal)
- Coronary artery disease
- Cerebrovascular disease
- Hypertension
- Breast or uterine cancer

Table 11. Hormone Regimens in Transgender Persons

Transgender females ^a	
Estrogen	
Oral	
Estradiol	2.0–6.0 mg/d
Transdermal	
Estradiol transdermal patch (New patch placed every 3–5 d)	0.025–0.2 mg/d
Parenteral	
Estradiol valerate or cypionate	5–30 mg IM every 2 wk 2–10 mg IM every week
Anti-androgens	
Spirololactone	100–300 mg/d
Cyproterone acetate ^b	25–50 mg/d
GnRH agonist	3.75 mg SQ (SC) monthly 11.25 mg SQ (SC) 3-monthly
Transgender males	
Testosterone	
Parenteral testosterone	
Testosterone enanthate or cypionate	100–200 mg SQ (IM) every 2 wk or SQ (SC) 50% per week
Testosterone undecanoate ^c	1000 mg every 12 wk
Transdermal testosterone	
Testosterone gel 1.6% ^d	50–100 mg/d
Testosterone transdermal patch	2.5–7.5 mg/d

Abbreviations: IM, intramuscularly; SQ, sequentially; SC, subcutaneously.

^aEstrogens used with or without antiandrogens or GnRH agonist.

^bNot available in the United States.

^cOne thousand milligrams initially followed by an injection at 6 wk then at 12-wk intervals.

^dAvoid cutaneous transfer to other individuals.

In transgender males, testosterone will result in clitoromegaly, temporary or permanent decreased fertility, deepening of the voice, cessation of menses (usually), and a significant increase in body hair, particularly on the face, chest, and abdomen. Cessation of menses may occur within a few months with testosterone treatment alone, although high doses of testosterone may be required. If uterine bleeding continues, clinicians may consider the addition of a progestational agent or endometrial ablation (138). Clinicians may also administer GnRH analogs or depot medroxyprogesterone to stop menses prior to testosterone treatment.

Transgender females

The hormone regimen for transgender females is more complex than the transgender male regimen (Appendix B). Treatment with physiologic doses of estrogen alone is insufficient to suppress testosterone levels into the normal range for females (139). Most published clinical studies report the need for adjunctive therapy to achieve testosterone levels in the female range (21, 113, 114, 132–134, 139, 140).

Multiple adjunctive medications are available, such as progestins with antiandrogen activity and GnRH agonists (141). Spirololactone works by directly blocking androgens during their interaction with the androgen

receptor (114, 133, 142). It may also have estrogenic activity (143). Cyproterone acetate, a progestational compound with antiandrogenic properties (113, 132, 144), is widely used in Europe. *5 α* -Reductase inhibitors do not reduce testosterone levels and have adverse effects (145).

Dittrich *et al.* (141) reported that monthly doses of the GnRH agonist goserelin acetate in combination with estrogen were effective in reducing testosterone levels with a low incidence of adverse reactions in 60 transgender females. Leuprolide and transdermal estrogen were as effective as cyproterone and transdermal estrogen in a comparative retrospective study (146).

Patients can take estrogen as oral conjugated estrogens, oral 17 β -estradiol, or transdermal 17 β -estradiol. Among estrogen options, the increased risk of thromboembolic events associated with estrogens in general seems most concerning with ethinyl estradiol specifically (134, 140, 141), which is why we specifically suggest that it not be used in any transgender treatment plan. Data distinguishing among other estrogen options are less well established although there is some thought that oral routes of administration are more thrombogenic due to the “first pass effect” than are transdermal and parenteral routes, and that the risk of thromboembolic events is dose-dependent. Injectable estrogen and sublingual

estrogen may benefit from avoiding the first pass effect, but they can result in more rapid peaks with greater overall periodicity and thus are more difficult to monitor (147, 148). However, there are no data demonstrating that increased periodicity is harmful otherwise.

Clinicians can use serum estradiol levels to monitor oral, transdermal, and intramuscular estradiol. Blood tests cannot monitor conjugated estrogens or synthetic estrogen use. Clinicians should measure serum estradiol and serum testosterone and maintain them at the level for premenopausal females (100 to 200 pg/mL and <50 ng/dL, respectively). The transdermal preparations and injectable estradiol cypionate or valerate preparations may confer an advantage in older transgender females who may be at higher risk for thromboembolic disease (149).

Values

Our recommendation to maintain levels of gender-affirming hormones in the normal adult range places a high value on the avoidance of the long-term complications of pharmacologic doses. Those patients receiving endocrine treatment who have relative contraindications to hormones should have an in-depth discussion with their physician to balance the risks and benefits of therapy.

Remarks

Clinicians should inform all endocrine-treated individuals of all risks and benefits of gender-affirming hormones prior to initiating therapy. Clinicians should strongly encourage tobacco use cessation in transgender females to avoid increased risk of VTE and cardiovascular complications. We strongly discourage the unsupervised use of hormone therapy (150).

Not all individuals with GD/gender incongruence seek treatment as described (*e.g.*, male-to-eunuchs and individuals seeking partial transition). Tailoring current protocols to the individual may be done within the context of accepted safety guidelines using a multidisciplinary approach including mental health. No evidence-based protocols are available for these groups (151). We need prospective studies to better understand treatment options for these persons.

- 3.4. We suggest that endocrinologists provide education to transgender individuals undergoing treatment about the onset and time course of physical changes induced by sex hormone treatment. (2 ⊕○○○)

Evidence

Transgender males

Physical changes that are expected to occur during the first 1 to 6 months of testosterone therapy include

cessation of menses, increased sexual desire, increased facial and body hair, increased oiliness of skin, increased muscle, and redistribution of fat mass. Changes that occur within the first year of testosterone therapy include deepening of the voice (152, 153), clitoromegaly, and male pattern hair loss (in some cases) (114, 144, 154, 155) (Table 12).

Transgender females

Physical changes that may occur in transgender females in the first 3 to 12 months of estrogen and anti-androgen therapy include decreased sexual desire, decreased spontaneous erections, decreased facial and body hair (usually mild), decreased oiliness of skin, increased breast tissue growth, and redistribution of fat mass (114, 139, 149, 154, 155, 161) (Table 13). Breast development is generally maximal at 2 years after initiating hormones (114, 139, 149, 155). Over a long period of time, the prostate gland and testicles will undergo atrophy.

Although the time course of breast development in transgender females has been studied (150), precise information about other changes induced by sex hormones is lacking (141). There is a great deal of variability among individuals, as evidenced during pubertal development. We all know that a major concern for transgender females is breast development. If we work with estrogens, the result will be often not what the transgender female expects.

Alternatively, there are transgender females who report an anecdotal improved breast development, mood, or sexual desire with the use of progestogens. However, there have been no well-designed studies of the role of progestogens in feminizing hormone regimens, so the question is still open.

Our knowledge concerning the natural history and effects of different cross-sex hormone therapies on breast

Table 12. Masculinizing Effects in Transgender Males

Effect	Onset	Maximum
Skin oiliness/acne	1–6 mo	1–2 y
Facial/body hair growth	6–12 mo	4–5 y
Scalp hair loss	6–12 mo	— ^a
Increased muscle mass/strength	6–12 mo	2–5 y
Fat redistribution	1–6 mo	2–5 y
Cessation of menses	1–6 mo	— ^b
Clitoral enlargement	1–6 mo	1–2 y
Vaginal atrophy	1–6 mo	1–2 y
Deepening of voice	6–12 mo	1–2 y

Estimates represent clinical observations: Toorians *et al.* (149), Assche-man *et al.* (156), Gooren *et al.* (157), Wierckx *et al.* (158).

^aPrevention and treatment as recommended for biological men.

^bMenorrhagia requires diagnosis and treatment by a gynecologist.

Table 13. Feminizing Effects in Transgender Females

Effect	Onset	Maximum
Redistribution of body fat	3–6 mo	2–3 y
Decrease in muscle mass and strength	3–6 mo	1–2 y
Softening of skin/decreased oiliness	3–6 mo	Unknown
Decreased sexual desire	1–3 mo	3–6 mo
Decreased spontaneous erections	1–3 mo	3–6 mo
Male sexual dysfunction	Variable	Variable
Breast growth	3–6 mo	2–3 y
Decreased testicular volume	3–6 mo	2–3 y
Decreased sperm production	Unknown	>3 y ^a
Decreased terminal hair growth	6–12 mo	>3 y ^a
Scalp hair	Variable	— ^b
Voice changes	None	— ^c

Estimates represent clinical observations: Toorians *et al.* (149), Asscheman *et al.* (156), Gooren *et al.* (157).

^aComplete removal of male sexual hair requires electrolysis or laser treatment or both.

^bFamilial scalp hair loss may occur if estrogens are stopped.

^cTreatment by speech pathologists for voice training is most effective.

development in transgender females is extremely sparse and based on the low quality of evidence. Current evidence does not indicate that progestogens enhance breast development in transgender females, nor does evidence prove the absence of such an effect. This prevents us from drawing any firm conclusion at this moment and demonstrates the need for further research to clarify these important clinical questions (162).

Values and preferences

Transgender persons have very high expectations regarding the physical changes of hormone treatment and are aware that body changes can be enhanced by surgical procedures (*e.g.*, breast, face, and body habitus). Clear expectations for the extent and timing of sex hormone-induced changes may prevent the potential harm and expense of unnecessary procedures.

4.0 Adverse Outcome Prevention and Long-Term Care

Hormone therapy for transgender males and females confers many of the same risks associated with sex hormone replacement therapy in nontransgender persons. The risks arise from and are worsened by inadvertent or intentional use of supraphysiologic doses of sex hormones, as well as use of inadequate doses of sex hormones to maintain normal physiology (131, 139).

- 4.1. We suggest regular clinical evaluation for physical changes and potential adverse changes in response to sex steroid hormones and laboratory monitoring of sex steroid hormone levels every

3 months during the first year of hormone therapy for transgender males and females and then once or twice yearly. (2 ⊕⊕○○)

Evidence

Pretreatment screening and appropriate regular medical monitoring are recommended for both transgender males and females during the endocrine transition and periodically thereafter (26, 155). Clinicians should monitor weight and blood pressure, conduct physical exams, and assess routine health questions, such as tobacco use, symptoms of depression, and risk of adverse events such as deep vein thrombosis/pulmonary embolism and other adverse effects of sex steroids.

Transgender males

Table 14 contains a standard monitoring plan for transgender males on testosterone therapy (154, 159). Key issues include maintaining testosterone levels in the physiologic normal male range and avoiding adverse events resulting from excess testosterone therapy, particularly erythrocytosis, sleep apnea, hypertension, excessive weight gain, salt retention, lipid changes, and excessive or cystic acne (135).

Because oral 17-alkylated testosterone is not recommended, serious hepatic toxicity is not anticipated with parenteral or transdermal testosterone use (163, 164). Past concerns regarding liver toxicity with testosterone have been alleviated with subsequent reports that indicate the risk of serious liver disease is minimal (144, 165, 166).

Transgender females

Table 15 contains a standard monitoring plan for transgender females on estrogens, gonadotropin suppression, or antiandrogens (160). Key issues include avoiding supraphysiologic doses or blood levels of estrogen that may lead to increased risk for thromboembolic disease, liver dysfunction, and hypertension. Clinicians should monitor serum estradiol levels using laboratories participating in external quality control, as measurements of estradiol in blood can be very challenging (167).

VTE may be a serious complication. A study reported a 20-fold increase in venous thromboembolic disease in a large cohort of Dutch transgender subjects (161). This increase may have been associated with the use of the synthetic estrogen, ethinyl estradiol (149). The incidence decreased when clinicians stopped administering ethinyl estradiol (161). Thus, the use of synthetic estrogens and conjugated estrogens is undesirable because of the inability to regulate doses by measuring serum levels and the risk of thromboembolic disease. In a German gender clinic, deep vein thrombosis occurred in 1 of 60 of transgender females treated with a GnRH analog and oral

Table 14. Monitoring of Transgender Persons on Gender-Affirming Hormone Therapy: Transgender Male

1. Evaluate patient every 3 mo in the first year and then one to two times per year to monitor for appropriate signs of virilization and for development of adverse reactions.
2. Measure serum testosterone every 3 mo until levels are in the normal physiologic male range:^a
 - a. For testosterone enanthate/cypionate injections, the testosterone level should be measured midway between injections. The target level is 400–700 ng/dL to 400 ng/dL. Alternatively, measure peak and trough levels to ensure levels remain in the normal male range.
 - b. For parenteral testosterone undecanoate, testosterone should be measured just before the following injection. If the level is <400 ng/dL, adjust dosing interval.
 - c. For transdermal testosterone, the testosterone level can be measured no sooner than after 1 wk of daily application (at least 2 h after application).
3. Measure hematocrit or hemoglobin at baseline and every 3 mo for the first year and then one to two times a year. Monitor weight, blood pressure, and lipids at regular intervals.
4. Screening for osteoporosis should be conducted in those who stop testosterone treatment, are not compliant with hormone therapy, or who develop risks for bone loss.
5. If cervical tissue is present, monitoring as recommended by the American College of Obstetricians and Gynecologists.
6. Ovariectomy can be considered after completion of hormone transition.
7. Conduct sub- and periareolar annual breast examinations if mastectomy performed. If mastectomy is not performed, then consider mammograms as recommended by the American Cancer Society.

^aAdapted from Lapauw *et al.* (154) and Ott *et al.* (159).

estradiol (141). The patient who developed a deep vein thrombosis was found to have a homozygous C677 T mutation in the methylenetetrahydrofolate reductase gene. In an Austrian gender clinic, administering gender-affirming hormones to 162 transgender females and 89 transgender males was not associated with VTE, despite an 8.0% and 5.6% incidence of thrombophilia (159). A more recent multinational study reported only 10 cases of VTE from a cohort of 1073 subjects (168). Thrombophilia screening of transgender persons initiating hormone treatment should be restricted to those with a personal or family history of VTE (159). Monitoring D-dimer levels during treatment is not recommended (169).

- 4.2. We suggest periodically monitoring prolactin levels in transgender females treated with estrogens. (2 ⊕⊕○○)

Evidence

Estrogen therapy can increase the growth of pituitary lactotroph cells. There have been several reports of prolactinomas occurring after long-term, high-dose

estrogen therapy (170–173). Up to 20% of transgender females treated with estrogens may have elevations in prolactin levels associated with enlargement of the pituitary gland (156). In most cases, the serum prolactin levels will return to the normal range with a reduction or discontinuation of the estrogen therapy or discontinuation of cyproterone acetate (157, 174, 175).

The onset and time course of hyperprolactinemia during estrogen treatment are not known. Clinicians should measure prolactin levels at baseline and then at least annually during the transition period and every 2 years thereafter. Given that only a few case studies reported prolactinomas, and prolactinomas were not reported in large cohorts of estrogen-treated persons, the risk is likely to be very low. Because the major presenting findings of microprolactinomas (hypogonadism and sometimes gynecomastia) are not apparent in transgender females, clinicians may perform radiologic examinations of the pituitary in those patients whose prolactin levels persistently increase despite stable or reduced estrogen levels. Some transgender individuals receive psychotropic medications that can increase prolactin levels (174).

Table 15. Monitoring of Transgender Persons on Gender-Affirming Hormone Therapy: Transgender Female

1. Evaluate patient every 3 mo in the first year and then one to two times per year to monitor for appropriate signs of feminization and for development of adverse reactions.
2. Measure serum testosterone and estradiol every 3 mo.
 - a. Serum testosterone levels should be <50 ng/dL.
 - b. Serum estradiol should not exceed the peak physiologic range: 100–200 pg/mL.
3. For individuals on spironolactone, serum electrolytes, particularly potassium, should be monitored every 3 mo in the first year and annually thereafter.
4. Routine cancer screening is recommended, as in nontransgender individuals (all tissues present).
5. Consider BMD testing at baseline (160). In individuals at low risk, screening for osteoporosis should be conducted at age 60 years or in those who are not compliant with hormone therapy.

This table presents strong recommendations and does not include lower level recommendations.

- 4.3. We suggest that clinicians evaluate transgender persons treated with hormones for cardiovascular risk factors using fasting lipid profiles, diabetes screening, and/or other diagnostic tools. (2 ⊕⊕○○)

Evidence

Transgender males

Administering testosterone to transgender males results in a more atherogenic lipid profile with lowered high-density lipoprotein cholesterol and higher triglyceride and low-density lipoprotein cholesterol values (176–179). Studies of the effect of testosterone on insulin sensitivity have mixed results (178, 180). A randomized, open-label uncontrolled safety study of transgender males treated with testosterone undecanoate demonstrated no insulin resistance after 1 year (181, 182). Numerous studies have demonstrated the effects of sex hormone treatment on the cardiovascular system (160, 179, 183, 184). Long-term studies from The Netherlands found no increased risk for cardiovascular mortality (161). Likewise, a meta-analysis of 19 randomized trials in nontransgender males on testosterone replacement showed no increased incidence of cardiovascular events (185). A systematic review of the literature found that data were insufficient (due to very low-quality evidence) to allow a meaningful assessment of patient-important outcomes, such as death, stroke, myocardial infarction, or VTE in transgender males (176). Future research is needed to ascertain the potential harm of hormonal therapies (176). Clinicians should manage cardiovascular risk factors as they emerge according to established guidelines (186).

Transgender females

A prospective study of transgender females found favorable changes in lipid parameters with increased high-density lipoprotein and decreased low-density lipoprotein concentrations (178). However, increased weight, blood pressure, and markers of insulin resistance attenuated these favorable lipid changes. In a meta-analysis, only serum triglycerides were higher at ≥ 24 months without changes in other parameters (187). The largest cohort of transgender females (mean age 41 years, followed for a mean of 10 years) showed no increase in cardiovascular mortality despite a 32% rate of tobacco use (161).

Thus, there is limited evidence to determine whether estrogen is protective or detrimental on lipid and glucose metabolism in transgender females (176). With aging, there is usually an increase of body weight. Therefore, as with nontransgender individuals, clinicians should

monitor and manage glucose and lipid metabolism and blood pressure regularly according to established guidelines (186).

- 4.4. We recommend that clinicians obtain BMD measurements when risk factors for osteoporosis exist, specifically in those who stop sex hormone therapy after gonadectomy. (1 ⊕⊕○○)

Evidence

Transgender males

Baseline bone mineral measurements in transgender males are generally in the expected range for their pre-treatment gender (188). However, adequate dosing of testosterone is important to maintain bone mass in transgender males (189, 190). In one study (190), serum LH levels were inversely related to BMD, suggesting that low levels of sex hormones were associated with bone loss. Thus, LH levels in the normal range may serve as an indicator of the adequacy of sex steroid administration to preserve bone mass. The protective effect of testosterone may be mediated by peripheral conversion to estradiol, both systemically and locally in the bone.

Transgender females

A baseline study of BMD reported T scores less than -2.5 in 16% of transgender females (191). In aging males, studies suggest that serum estradiol more positively correlates with BMD than does testosterone (192, 193) and is more important for peak bone mass (194). Estrogen preserves BMD in transgender females who continue on estrogen and antiandrogen therapies (188, 190, 191, 195, 196).

Fracture data in transgender males and females are not available. Transgender persons who have undergone gonadectomy may choose not to continue consistent sex steroid treatment after hormonal and surgical sex reassignment, thereby becoming at risk for bone loss. There have been no studies to determine whether clinicians should use the sex assigned at birth or affirmed gender for assessing osteoporosis (*e.g.*, when using the FRAX tool). Although some researchers use the sex assigned at birth (with the assumption that bone mass has usually peaked for transgender people who initiate hormones in early adulthood), this should be assessed on a case-by-case basis until there are more data available. This assumption will be further complicated by the increasing prevalence of transgender people who undergo hormonal transition at a pubertal age or soon after puberty. Sex for comparison within risk assessment tools may be based on the age at which hormones were initiated and the length of exposure to hormones. In some cases, it may be

reasonable to assess risk using both the male and female calculators and using an intermediate value. Because all subjects underwent normal pubertal development, with known effects on bone size, reference values for birth sex were used for all participants (154).

- 4.5. We suggest that transgender females with no known increased risk of breast cancer follow breast-screening guidelines recommended for those designated female at birth. (2 ⊕⊕○○)
- 4.6. We suggest that transgender females treated with estrogens follow individualized screening according to personal risk for prostatic disease and prostate cancer. (2 ⊕○○○)

Evidence

Studies have reported a few cases of breast cancer in transgender females (197–200). A Dutch study of 1800 transgender females followed for a mean of 15 years (range of 1–30 years) found one case of breast cancer. The Women's Health Initiative study reported that females taking conjugated equine estrogen without progesterone for 7 years did not have an increased risk of breast cancer as compared with females taking placebo (137).

In transgender males, a large retrospective study conducted at the U.S. Veterans Affairs medical health system identified seven breast cancers (194). The authors reported that this was not above the expected rate of breast cancers in cisgender females in this cohort. Furthermore, they did report one breast cancer that developed in a transgender male patient after mastectomy, supporting the fact that breast cancer can occur even after mastectomy. Indeed, there have been case reports of breast cancer developing in subareolar tissue in transgender males, which occurred after mastectomy (201, 202).

Women with primary hypogonadism (Turner syndrome) treated with estrogen replacement exhibited a significantly decreased incidence of breast cancer as compared with national standardized incidence ratios (203, 204). These studies suggest that estrogen therapy does not increase the risk of breast cancer in the short term (<20 to 30 years). We need long-term studies to determine the actual risk, as well as the role of screening mammograms. Regular examinations and gynecologic advice should determine monitoring for breast cancer.

Prostate cancer is very rare before the age of 40, especially with androgen deprivation therapy (205). Childhood or pubertal castration results in regression of the prostate and adult castration reverses benign prostate hypertrophy (206). Although van Kesteren *et al.* (207) reported that estrogen therapy does not induce hypertrophy or premalignant changes in the prostates of

transgender females, studies have reported cases of benign prostatic hyperplasia in transgender females treated with estrogens for 20 to 25 years (208, 209). Studies have also reported a few cases of prostate carcinoma in transgender females (210–214).

Transgender females may feel uncomfortable scheduling regular prostate examinations. Gynecologists are not trained to screen for prostate cancer or to monitor prostate growth. Thus, it may be reasonable for transgender females who transitioned after age 20 years to have annual screening digital rectal examinations after age 50 years and prostate-specific antigen tests consistent with U.S. Preventive Services Task Force Guidelines (215).

- 4.7. We advise that clinicians determine the medical necessity of including a total hysterectomy and oophorectomy as part of gender-affirming surgery. (Ungraded Good Practice Statement)

Evidence

Although aromatization of testosterone to estradiol in transgender males has been suggested as a risk factor for endometrial cancer (216), no cases have been reported. When transgender males undergo hysterectomy, the uterus is small and there is endometrial atrophy (217, 218). Studies have reported cases of ovarian cancer (219, 220). Although there is limited evidence for increased risk of reproductive tract cancers in transgender males, health care providers should determine the medical necessity of a laparoscopic total hysterectomy as part of a gender-affirming surgery to prevent reproductive tract cancer (221).

Values

Given the discomfort that transgender males experience accessing gynecologic care, our recommendation for the medical necessity of total hysterectomy and oophorectomy places a high value on eliminating the risks of female reproductive tract disease and cancer and a lower value on avoiding the risks of these surgical procedures (related to the surgery and to the potential undesirable health consequences of oophorectomy) and their associated costs.

Remarks

The sexual orientation and type of sexual practices will determine the need and types of gynecologic care required following transition. Additionally, in certain countries, the approval required to change the sex in a birth certificate for transgender males may be dependent on having a complete hysterectomy. Clinicians should help patients research nonmedical administrative criteria and

provide counseling. If individuals decide not to undergo hysterectomy, screening for cervical cancer is the same as all other females.

5.0 Surgery for Sex Reassignment and Gender Confirmation

For many transgender adults, genital gender-affirming surgery may be the necessary step toward achieving their ultimate goal of living successfully in their desired gender role. The type of surgery falls into two main categories: (1) those that directly affect fertility and (2) those that do not. Those that change fertility (previously called sex reassignment surgery) include genital surgery to remove the penis and gonads in the male and removal of the uterus and gonads in the female. The surgeries that effect fertility are often governed by the legal system of the state or country in which they are performed. Other gender-confirming surgeries that do not directly affect fertility are not so tightly governed.

Gender-affirming surgical techniques have improved markedly during the past 10 years. Reconstructive genital surgery that preserves neurologic sensation is now the standard. The satisfaction rate with surgical reassignment of sex is now very high (187). Additionally, the mental health of the individual seems to be improved by participating in a treatment program that defines a pathway of gender-affirming treatment that includes hormones and surgery (130, 144) (Table 16).

Surgery that affects fertility is irreversible. The World Professional Association for Transgender Health Standards of Care (222) emphasizes that the “threshold of 18 should not be seen as an indication in itself for active intervention.” If the social transition has not been satisfactory, if the person is not satisfied with or is ambivalent about the effects of sex hormone treatment, or if the person is ambivalent about surgery then the individual should not be referred for surgery (223, 224).

Gender-affirming genital surgeries for transgender females that affect fertility include gonadectomy, penectomy, and creation of a neovagina (225, 226). Surgeons often invert the skin of the penis to form the wall of the vagina, and several literatures reviews have

reported on outcomes (227). Sometimes there is inadequate tissue to form a full neovagina, so clinicians have revisited using intestine and found it to be successful (87, 228, 229). Some newer vaginoplasty techniques may involve autologous oral epithelial cells (230, 231).

The scrotum becomes the labia majora. Surgeons use reconstructive surgery to fashion the clitoris and its hood, preserving the neurovascular bundle at the tip of the penis as the neurosensory supply to the clitoris. Some surgeons are also creating a sensate pedicled-spot adding a G spot to the neovagina to increase sensation (232). Most recently, plastic surgeons have developed techniques to fashion labia minora. To further complete the feminization, uterine transplants have been proposed and even attempted (233).

Neovaginal prolapse, rectovaginal fistula, delayed healing, vaginal stenosis, and other complications do sometimes occur (234, 235). Clinicians should strongly remind the transgender person to use their dilators to maintain the depth and width of the vagina throughout the postoperative period. Genital sexual responsivity and other aspects of sexual function are usually preserved following genital gender-affirming surgery (236, 237).

Ancillary surgeries for more feminine or masculine appearance are not within the scope of this guideline. Voice therapy by a speech language pathologist is available to transform speech patterns to the affirmed gender (148). Spontaneous voice deepening occurs during testosterone treatment of transgender males (152, 238). No studies have compared the effectiveness of speech therapy, laryngeal surgery, or combined treatment.

Breast surgery is a good example of gender-confirming surgery that does not affect fertility. In all females, breast size exhibits a very broad spectrum. For transgender females to make the best informed decision, clinicians should delay breast augmentation surgery until the patient has completed at least 2 years of estrogen therapy, because the breasts continue to grow during that time (141, 155).

Another major procedure is the removal of facial and masculine-appearing body hair using either electrolysis or

Table 16. Criteria for Gender-Affirming Surgery, Which Affects Fertility

1. Persistent, well-documented gender dysphoria
2. Legal age of majority in the given country
3. Having continuously and responsibly used gender-affirming hormones for 12 mo (if there is no medical contraindication to receiving such therapy)
4. Successful continuous full-time living in the new gender role for 12 mo
5. If significant medical or mental health concerns are present, they must be well controlled
6. Demonstrable knowledge of all practical aspects of surgery (e.g., cost, required lengths of hospitalizations, likely complications, postsurgical rehabilitation)

laser treatments. Other feminizing surgeries, such as that to feminize the face, are now becoming more popular (239–241).

In transgender males, clinicians usually delay gender-affirming genital surgeries until after a few years of androgen therapy. Those surgeries that affect fertility in this group include oophorectomy, vaginectomy, and complete hysterectomy. Surgeons can safely perform them vaginally with laparoscopy. These are sometimes done in conjunction with the creation of a neopenis. The cosmetic appearance of a neopenis is now very good, but the surgery is multistage and very expensive (242, 243). Radial forearm flap seems to be the most satisfactory procedure (228, 244). Other flaps also exist (245). Surgeons can make neopenile erections possible by reinnervation of the flap and subsequent contraction of the muscle, leading to stiffening of the neopenis (246, 247), but results are inconsistent (248). Surgeons can also stiffen the penis by imbedding some mechanical device (*e.g.*, a rod or some inflatable apparatus) (249, 250). Because of these limitations, the creation of a neopenis has often been less than satisfactory. Recently, penis transplants are being proposed (233).

In fact, most transgender males do not have any external genital surgery because of the lack of access, high cost, and significant potential complications. Some choose a metaoidioplasty that brings forward the clitoris, thereby allowing them to void in a standing position without wetting themselves (251, 252). Surgeons can create the scrotum from the labia majora with good cosmetic effect and can implant testicular prostheses (253).

The most important masculinizing surgery for the transgender male is mastectomy, and it does not affect fertility. Breast size only partially regresses with androgen therapy (155). In adults, discussions about mastectomy usually take place after androgen therapy has started. Because some transgender male adolescents present after significant breast development has occurred, they may also consider mastectomy 2 years after they begin androgen therapy and before age 18 years. Clinicians should individualize treatment based on the physical and mental health status of the individual. There are now newer approaches to mastectomy with better outcomes (254, 255). These often involve chest contouring (256). Mastectomy is often necessary for living comfortably in the new gender (256).

5.1. We recommend that a patient pursue genital gender-affirming surgery only after the MHP and the clinician responsible for endocrine transition therapy both agree that surgery is medically

necessary and would benefit the patient's overall health and/or well-being. (1 ⊕⊕○○)

- 5.2. We advise that clinicians approve genital gender-affirming surgery only after completion of at least 1 year of consistent and compliant hormone treatment, unless hormone therapy is not desired or medically contraindicated. (Ungraded Good Practice Statement)
- 5.3. We advise that the clinician responsible for endocrine treatment and the primary care provider ensure appropriate medical clearance of transgender individuals for genital gender-affirming surgery and collaborate with the surgeon regarding hormone use during and after surgery. (Ungraded Good Practice Statement)
- 5.4. We recommend that clinicians refer hormone-treated transgender individuals for genital surgery when: (1) the individual has had a satisfactory social role change, (2) the individual is satisfied about the hormonal effects, and (3) the individual desires definitive surgical changes. (1 ⊕○○○)
- 5.5. We suggest that clinicians delay gender-affirming genital surgery involving gonadectomy and/or hysterectomy until the patient is at least 18 years old or legal age of majority in his or her country. (2 ⊕⊕○○)
- 5.6. We suggest that clinicians determine the timing of breast surgery for transgender males based upon the physical and mental health status of the individual. There is insufficient evidence to recommend a specific age requirement. (2 ⊕○○○)

Evidence

Owing to the lack of controlled studies, incomplete follow-up, and lack of valid assessment measures, evaluating various surgical approaches and techniques is difficult. However, one systematic review including a large numbers of studies reported satisfactory cosmetic and functional results for vaginoplasty/neovagina construction (257). For transgender males, the outcomes are less certain. However, the problems are now better understood (258). Several postoperative studies report significant long-term psychological and psychiatric pathology (259–261). One study showed satisfaction with breasts, genitals, and femininity increased significantly and showed the importance of surgical treatment as a key therapeutic option for transgender females (262). Another analysis demonstrated that, despite the young average age at death following surgery and the relatively larger number of individuals with somatic morbidity, the study does not allow for determination of

causal relationships between, for example, specific types of hormonal or surgical treatment received and somatic morbidity and mortality (263). Reversal surgery in regretful male-to-female transsexuals after sexual reassignment surgery represents a complex, multistage procedure with satisfactory outcomes. Further insight into the characteristics of persons who regret their decision postoperatively would facilitate better future selection of applicants eligible for sexual reassignment surgery. We need more studies with appropriate controls that examine long-term quality of life, psychosocial outcomes, and psychiatric outcomes to determine the long-term benefits of surgical treatment.

When a transgender individual decides to have gender-affirming surgery, both the hormone prescribing clinician and the MHP must certify that the patient satisfies criteria for gender-affirming surgery (Table 16).

There is some concern that estrogen therapy may cause an increased risk for venous thrombosis during or following surgery (176). For this reason, the surgeon and the hormone-prescribing clinician should collaborate in making a decision about the use of hormones before and following surgery. One study suggests that preoperative factors (such as compliance) are less important for patient satisfaction than are the physical postoperative results (56). However, other studies and clinical experience dictate that individuals who do not follow medical instructions and do not work with their physicians toward a common goal do not achieve treatment goals (264) and experience higher rates of postoperative infections and other complications (265, 266). It is also important that the person requesting surgery feels comfortable with the anatomical changes that have occurred during hormone therapy. Dissatisfaction with social and physical outcomes during the hormone transition may be a contraindication to surgery (223).

An endocrinologist or experienced medical provider should monitor transgender individuals after surgery. Those who undergo gonadectomy will require hormone replacement therapy, surveillance, or both to prevent adverse effects of chronic hormone deficiency.

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Correspondence and Reprint Requests: The Endocrine Society, 2055 L Street NW, Suite 600, Washington, DC 20036. E-mail: publications@endocrine.org; Phone: 202971-3636.

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DIAGNOSTIC AND STATISTICAL
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302.82 Voyeurism

The paraphiliac focus of Voyeurism involves the act of observing unsuspecting individuals, usually strangers, who are naked, in the process of disrobing, or engaging in sexual activity. The act of looking ("peeping") is for the purpose of achieving sexual excitement, and generally no sexual activity with the observed person is sought. Orgasm, usually produced by masturbation, may occur during the voyeuristic activity or later in response to the memory of what the person has witnessed. Often these individuals have the fantasy of having a sexual experience with the observed person, but in reality this rarely occurs. In its severe form, peeping constitutes the exclusive form of sexual activity. The onset of voyeuristic behavior is usually before age 15 years. The course tends to be chronic.

■ Diagnostic criteria for 302.82 Voyeurism

- A. Over a period of at least 6 months, recurrent, intense sexually arousing fantasies, sexual urges, or behaviors involving the act of observing an unsuspecting person who is naked, in the process of disrobing, or engaging in sexual activity.
- B. The fantasies, sexual urges, or behaviors cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

302.9 Paraphilia Not Otherwise Specified

This category is included for coding Paraphilias that do not meet the criteria for any of the specific categories. Examples include, but are not limited to, telephone scatologia (obscene phone calls), necrophilia (corpses), partialism (exclusive focus on part of body), zoophilia (animals), coprophilia (feces), klismaphilia (enemas), and urophilia (urine)

Gender Identity Disorders

Gender Identity Disorder

Diagnostic Features

There are two components of Gender Identity Disorder, both of which must be present to make the diagnosis. There must be evidence of a strong and persistent cross-gender identification, which is the desire to be, or the insistence that one is, of the other sex

(Criterion A). This cross-gender identification must not merely be a desire for any perceived cultural advantages of being the other sex. There must also be evidence of persistent discomfort about one's assigned sex or a sense of inappropriateness in the gender role of that sex (Criterion B). The diagnosis is not made if the individual has a concurrent physical intersex condition (e.g., androgen insensitivity syndrome or congenital adrenal hyperplasia) (Criterion C). To make the diagnosis, there must be evidence of clinically significant distress or impairment in social, occupational, or other important areas of functioning (Criterion D).

In boys, the cross-gender identification is manifested by a marked preoccupation with traditionally feminine activities. They may have a preference for dressing in girls' or women's clothes or may improvise such items from available materials when genuine articles are unavailable. Towels, aprons, and scarves are often used to represent long hair or skirts. There is a strong attraction for the stereotypical games and pastimes of girls. They particularly enjoy playing house, drawing pictures of beautiful girls and princesses, and watching television or videos of their favorite female characters. Stereotypical female-type dolls, such as Barbie, are often their favorite toys, and girls are their preferred playmates. When playing "house," these boys role-play female figures, most commonly "mother roles," and often are quite preoccupied with female fantasy figures. They avoid rough-and-tumble play and competitive sports and have little interest in cars and trucks or other nonaggressive but stereotypical boy's toys. They may express a wish to be a girl and assert that they will grow up to be a woman. They may insist on sitting to urinate and pretend not to have a penis by pushing it in between their legs. More rarely, boys with Gender Identity Disorder may state that they find their penis or testes disgusting, that they want to remove them, or that they have, or wish to have, a vagina.

Girls with Gender Identity Disorder display intense negative reactions to parental expectations or attempts to have them wear dresses or other feminine attire. Some may refuse to attend school or social events where such clothes may be required. They prefer boy's clothing and short hair, are often misidentified by strangers as boys, and may ask to be called by a boy's name. Their fantasy heroes are most often powerful male figures, such as Batman or Superman. These girls prefer boys as playmates, with whom they share interests in contact sports, rough-and-tumble play, and traditional boyhood games. They show little interest in dolls or any form of feminine dress up or role-play activity. A girl with this disorder may occasionally refuse to urinate in a sitting position. She may claim that she has or will grow a penis and may not want to grow breasts or to menstruate. She may assert that she will grow up to be a man. Such girls typically reveal marked cross-gender identification in role-play, dreams, and fantasies.

Adults with Gender Identity Disorder are preoccupied with their wish to live as a member of the other sex. This preoccupation may be manifested as an intense desire to adopt the social role of the other sex or to acquire the physical appearance of the other sex through hormonal or surgical manipulation. Adults with this disorder are uncomfortable being regarded by others as, or functioning in society as, a member of their designated sex. To varying degrees, they adopt the behavior, dress, and mannerisms of the other sex. In private, these individuals may spend much time cross-dressed and working on the appearance of being the other sex. Many attempt to pass in public as the other sex. With cross-dressing and hormonal treatment (and for males, electrolysis), many individuals with this disorder may pass convincingly as the other sex. The sexual activity of these individuals with same-sex partners is generally constrained by the preference that their partners neither see nor touch their genitals. For some males who

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present later in life, (often following marriage), sexual activity with a woman is accompanied by the fantasy of being lesbian lovers or that his partner is a man and he is a woman.

In adolescents, the clinical features may resemble either those of children or those of adults, depending on the individual's developmental level, and the criteria should be applied accordingly. In a younger adolescent, it may be more difficult to arrive at an accurate diagnosis because of the adolescent's guardedness. This may be increased if the adolescent feels ambivalent about cross-gender identification or feels that it is unacceptable to the family. The adolescent may be referred because the parents or teachers are concerned about social isolation or peer teasing and rejection. In such circumstances, the diagnosis should be reserved for those adolescents who appear quite cross-gender identified in their dress and who engage in behaviors that suggest significant cross-gender identification (e.g., shaving legs in males). Clarifying the diagnosis in children and adolescents may require monitoring over an extended period of time.

Distress or disability in individuals with Gender Identity Disorder is manifested differently across the life cycle. In young children, distress is manifested by the stated unhappiness about their assigned sex. Preoccupation with cross-gender wishes often interferes with ordinary activities. In older children, failure to develop age-appropriate same-sex peer relationships and skills often leads to isolation and distress, and some children may refuse to attend school because of teasing or pressure to dress in attire stereotypical of their assigned sex. In adolescents and adults, preoccupation with cross-gender wishes often interferes with ordinary activities. Relationship difficulties are common and functioning at school or at work may be impaired.

Specifiers

For sexually mature individuals, the following specifiers may be noted based on the individual's sexual orientation: **Sexually Attracted to Males**, **Sexually Attracted to Females**, **Sexually Attracted to Both**, and **Sexually Attracted to Neither**. Males with Gender Identity Disorder include substantial proportions with all four specifiers. Virtually all females with Gender Identity Disorder will receive the same specifier—Sexually Attracted to Females—although there are exceptional cases involving females who are Sexually Attracted to Males.

Recording Procedures

The assigned diagnostic code depends on the individual's current age: if the disorder occurs in childhood, the code 302.6 is used; for an adolescent or adult, 302.85 is used.

Associated Features and Disorders

Associated descriptive features and mental disorders. Many individuals with Gender Identity Disorder become socially isolated. Isolation and ostracism contribute to low self-esteem and may lead to school aversion or dropping out of school. Peer ostracism and teasing are especially common sequelae for boys with the disorder. Boys with Gender Identity Disorder often show marked feminine mannerisms and speech patterns.

The disturbance can be so pervasive that the mental lives of some individuals revolve only around those activities that lessen gender distress. They are often preoccupied with appearance, especially early in the transition to living in the opposite sex role. Relationships with one or both parents also may be seriously impaired. Some males with Gender Identity Disorder resort to self-treatment with hormones and may very rarely perform their own castration or penectomy. Especially in urban centers, some males with the disorder may engage in prostitution, which places them at high risk for human immunodeficiency virus (HIV) infection. Suicide attempts and Substance-Related Disorders are commonly associated.

Children with Gender Identity Disorder may manifest coexisting Separation Anxiety Disorder, Generalized Anxiety Disorder, and symptoms of depression. Adolescents are particularly at risk for depression and suicidal ideation and suicide attempts. In adults, anxiety and depressive symptoms may be present. Some adult males have a history of Transvestic Fetishism as well as other Paraphilias. Associated Personality Disorders are more common among males than among females being evaluated at adult gender clinics.

Associated laboratory findings. There is no diagnostic test specific for Gender Identity Disorder. In the presence of a normal physical examination, karyotyping for sex chromosomes and sex hormone assays are usually not indicated. Psychological testing may reveal cross-gender identification or behavior patterns.

Associated physical examination findings and general medical conditions.

Individuals with Gender Identity Disorder have normal genitalia (in contrast to the ambiguous genitalia or hypogonadism found in physical intersex conditions). Adolescent and adult males with Gender Identity Disorder may show breast enlargement resulting from hormone ingestion, hair denuding from temporary or permanent epilation, and other physical changes as a result of procedures such as rhinoplasty or thyroid cartilage shaving (surgical reduction of the Adam's apple). Distorted breasts or breast rashes may be seen in females who wear breast binders. Postsurgical complications in genetic females include prominent chest wall scars, and in genetic males, vaginal strictures, rectovaginal fistulas, urethral stenoses, and misdirected urinary streams. Adult females with Gender Identity Disorder may have a higher than expected likelihood of polycystic ovarian disease.

Specific Age and Gender Features

Females with Gender Identity Disorders generally experience less ostracism because of cross-gender interests and may suffer less from peer rejection, at least until adolescence. In child clinic samples, there are approximately five boys for each girl referred with this disorder. In adult clinic samples, men outnumber women by about two or three times. In children, the referral bias toward males may partly reflect the greater stigma that cross gender behavior carries for boys than for girls.

Prevalence

There are no recent epidemiological studies to provide data on prevalence of Gender Identity Disorder. Data from smaller countries in Europe with access to total population statistics and referrals suggest that roughly 1 per 30,000 adult males and 1 per 100,000 adult females seek sex-reassignment surgery.

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Course

For clinically referred children, onset of cross-gender interests and activities is usually between ages 2 and 4 years, and some parents report that their child has always had cross-gender interests. Only a very small number of children with Gender Identity Disorder will continue to have symptoms that meet criteria for Gender Identity Disorder in later adolescence or adulthood. Typically, children are referred around the time of school entry because of parental concern that what they regarded as a "phase" does not appear to be passing. Most children with Gender Identity Disorder display less overt cross-gender behaviors with time, parental intervention, or response from peers. By late adolescence or adulthood, about three-quarters of boys who had a childhood history of Gender Identity Disorder report a homosexual or bisexual orientation, but without concurrent Gender Identity Disorder. Most of the remainder report a heterosexual orientation, also without concurrent Gender Identity Disorder. The corresponding percentages for sexual orientation in girls are not known. Some adolescents may develop a clearer cross-gender identification and request sex-reassignment surgery or may continue in a chronic course of gender confusion or dysphoria.

In adult males, there are two different courses for the development of Gender Identity Disorder. The first is a continuation of Gender Identity Disorder that had an onset in childhood or early adolescence. These individuals typically present in late adolescence or adulthood. In the other course, the more overt signs of cross-gender identification appear later and more gradually, with a clinical presentation in early to mid-adulthood usually following, but sometimes concurrent with, Transvestic Fetishism. The later-onset group may be more fluctuating in the degree of cross-gender identification, more ambivalent about sex-reassignment surgery, more likely to be sexually attracted to women, and less likely to be satisfied after sex-reassignment surgery. Males with Gender Identity Disorder who are sexually attracted to males tend to present in adolescence or early adulthood with a lifelong history of gender dysphoria. In contrast, those who are sexually attracted to females, to both males and females, or to neither sex tend to present later and typically have a history of Transvestic Fetishism. If Gender Identity Disorder is present in adulthood, it tends to have a chronic course, but spontaneous remission has been reported.

Differential Diagnosis

Gender Identity Disorder can be distinguished from simple **nonconformity to stereotypical sex role behavior** by the extent and pervasiveness of the cross-gender wishes, interests, and activities. This disorder is not meant to describe a child's nonconformity to stereotypic sex-role behavior as, for example, in "tomboyishness" in girls or "sissyish" behavior in boys. Rather, it represents a profound disturbance of the individual's sense of identity with regard to maleness or femaleness. Behavior in children that merely does not fit the cultural stereotype of masculinity or femininity should not be given the diagnosis unless the full syndrome is present, including marked distress or impairment.

Transvestic Fetishism occurs in heterosexual (or bisexual) men for whom the cross-dressing behavior is for the purpose of sexual excitement. Aside from cross-dressing, most individuals with Transvestic Fetishism do not have a history of childhood cross-gender behaviors. Males with a presentation that meets full criteria for Gender Identity Disorder as well as Transvestic Fetishism should be given both diagnoses. If gender dysphoria is present in an individual with Transvestic Fetishism but full criteria

for Gender Identity Disorder are not met, the specifier With Gender Dysphoria can be used.

The category **Gender Identity Disorder Not Otherwise Specified** can be used for individuals who have a gender identity problem with a **concurrent congenital intersex condition** (e.g., androgen insensitivity syndrome or congenital adrenal hyperplasia).

In **Schizophrenia**, there may rarely be delusions of belonging to the other sex. Insistence by a person with a Gender Identity Disorder that he or she is of the other sex is not considered a delusion, because what is invariably meant is that the person feels like a member of the other sex rather than truly believes that he or she is a member of the other sex. In very rare cases, however, Schizophrenia and severe Gender Identity Disorder may coexist.

■ Diagnostic criteria for Gender Identity Disorder

- A. A strong and persistent cross-gender identification (not merely a desire for any perceived cultural advantages of being the other sex).

In children, the disturbance is manifested by four (or more) of the following:

- (1) repeatedly stated desire to be, or insistence that he or she is, the other sex
- (2) in boys, preference for cross-dressing or simulating female attire; in girls, insistence on wearing only stereotypical masculine clothing
- (3) strong and persistent preferences for cross-sex roles in make-believe play or persistent fantasies of being the other sex
- (4) intense desire to participate in the stereotypical games and pastimes of the other sex
- (5) strong preference for playmates of the other sex

In adolescents and adults, the disturbance is manifested by symptoms such as a stated desire to be the other sex, frequent passing as the other sex, desire to live or be treated as the other sex, or the conviction that he or she has the typical feelings and reactions of the other sex.

- B. Persistent discomfort with his or her sex or sense of inappropriateness in the gender role of that sex.

In children, the disturbance is manifested by any of the following: in boys, assertion that his penis or testes are disgusting or will disappear or assertion that it would be better not to have a penis, or aversion toward rough-and-tumble play and rejection of male stereotypical toys, games, and activities; in girls, rejection of urinating in a sitting position, assertion that she has or will grow a penis, or assertion that she does not want to grow breasts or menstruate, or marked aversion toward normative feminine clothing.

(continued)

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 Diagnostic criteria for Gender Identity Disorder (*continued*)

In adolescents and adults, the disturbance is manifested by symptoms such as preoccupation with getting rid of primary and secondary sex characteristics (e.g., request for hormones, surgery, or other procedures to physically alter sexual characteristics to simulate the other sex) or belief that he or she was born the wrong sex.

- C. The disturbance is not concurrent with a physical intersex condition.
- D. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Code based on current age:

302.6 Gender Identity Disorder in Children

302.85 Gender Identity Disorder in Adolescents or Adults

Specify if (for sexually mature individuals):

Sexually Attracted to Males

Sexually Attracted to Females

Sexually Attracted to Both

Sexually Attracted to Neither

302.6 Gender Identity Disorder Not Otherwise Specified

This category is included for coding disorders in gender identity that are not classifiable as a specific Gender Identity Disorder. Examples include

1. Intersex conditions (e.g., androgen insensitivity syndrome or congenital adrenal hyperplasia) and accompanying gender dysphoria
2. Transient, stress-related cross-dressing behavior
3. Persistent preoccupation with castration or penectomy without a desire to acquire the sex characteristics of the other sex

302.9 Sexual Disorder Not Otherwise Specified

This category is included for coding a sexual disturbance that does not meet the criteria for any specific Sexual Disorder and is neither a Sexual Dysfunction nor a Paraphilia. Examples include

1. Marked feelings of inadequacy concerning sexual performance or other traits related to self-imposed standards of masculinity or femininity
2. Distress about a pattern of repeated sexual relationships involving a succession of lovers who are experienced by the individual only as things to be used
3. Persistent and marked distress about sexual orientation



Original Investigation | Pediatrics

Mental Health Outcomes in Transgender and Nonbinary Youths Receiving Gender-Affirming Care

Diana M. Tordoff, MPH; Jonathon W. Wanta, MD; Arin Collin, BA; Cesalie Stepney, PhD; David J. Inwards-Breland, MD, MPH; Kym Ahrens, MD, MPH

Abstract

IMPORTANCE Transgender and nonbinary (TNB) youths are disproportionately burdened by poor mental health outcomes owing to decreased social support and increased stigma and discrimination. Although gender-affirming care is associated with decreased long-term adverse mental health outcomes among these youths, less is known about its association with mental health immediately after initiation of care.

OBJECTIVE To investigate changes in mental health over the first year of receiving gender-affirming care and whether initiation of puberty blockers (PBs) and gender-affirming hormones (GAHs) was associated with changes in depression, anxiety, and suicidality.

DESIGN, SETTING, AND PARTICIPANTS This prospective observational cohort study was conducted at an urban multidisciplinary gender clinic among TNB adolescents and young adults seeking gender-affirming care from August 2017 to June 2018. Data were analyzed from August 2020 through November 2021.

EXPOSURES Time since enrollment and receipt of PBs or GAHs.

MAIN OUTCOMES AND MEASURES Mental health outcomes of interest were assessed via the Patient Health Questionnaire 9-item (PHQ-9) and Generalized Anxiety Disorder 7-item (GAD-7) scales, which were dichotomized into measures of moderate or severe depression and anxiety (ie, scores ≥ 10), respectively. Any self-report of self-harm or suicidal thoughts over the previous 2 weeks was assessed using PHQ-9 question 9. Generalized estimating equations were used to assess change from baseline in each outcome at 3, 6, and 12 months of follow-up. Bivariate and multivariable logistic models were estimated to examine temporal trends and investigate associations between receipt of PBs or GAHs and each outcome.

RESULTS Among 104 youths aged 13 to 20 years (mean [SD] age, 15.8 [1.6] years) who participated in the study, there were 63 transmasculine individuals (60.6%), 27 transfeminine individuals (26.0%), 10 nonbinary or gender fluid individuals (9.6%), and 4 youths who responded "I don't know" or did not respond to the gender identity question (3.8%). At baseline, 59 individuals (56.7%) had moderate to severe depression, 52 individuals (50.0%) had moderate to severe anxiety, and 45 individuals (43.3%) reported self-harm or suicidal thoughts. By the end of the study, 69 youths (66.3%) had received PBs, GAHs, or both interventions, while 35 youths had not received either intervention (33.7%). After adjustment for temporal trends and potential confounders, we observed 60% lower odds of depression (adjusted odds ratio [aOR], 0.40; 95% CI, 0.17-0.95) and 73% lower odds of suicidality (aOR, 0.27; 95% CI, 0.11-0.65) among youths who had initiated PBs or GAHs compared with youths who had not. There was no association between PBs or GAHs and anxiety (aOR, 1.01; 95% CI, 0.41, 2.51).

(continued)

Key Points

Question Is gender-affirming care for transgender and nonbinary (TNB) youths associated with changes in depression, anxiety, and suicidality?

Findings In this prospective cohort of 104 TNB youths aged 13 to 20 years, receipt of gender-affirming care, including puberty blockers and gender-affirming hormones, was associated with 60% lower odds of moderate or severe depression and 73% lower odds of suicidality over a 12-month follow-up.

Meaning This study found that access to gender-affirming care was associated with mitigation of mental health disparities among TNB youths over 1 year; given this population's high rates of adverse mental health outcomes, these data suggest that access to pharmacological interventions may be associated with improved mental health among TNB youths over a short period.

+ Invited Commentary

+ Supplemental content

Author affiliations and article information are listed at the end of this article.

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Abstract (continued)

CONCLUSIONS AND RELEVANCE This study found that gender-affirming medical interventions were associated with lower odds of depression and suicidality over 12 months. These data add to existing evidence suggesting that gender-affirming care may be associated with improved well-being among TNB youths over a short period, which is important given mental health disparities experienced by this population, particularly the high levels of self-harm and suicide.

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Introduction

Transgender and nonbinary (TNB) youths are disproportionately burdened by poor mental health outcomes, including depression, anxiety, and suicidal ideation and attempts.¹⁻⁵ These disparities are likely owing to high levels of social rejection, such as a lack of support from parents^{6,7} and bullying,^{6,8,9} and increased stigma and discrimination experienced by TNB youths. Multidisciplinary care centers have emerged across the country to address the health care needs of TNB youths, which include access to medical gender-affirming interventions, such as puberty blockers (PBs) and gender-affirming hormones (GAHs).¹⁰ These centers coordinate care and help youths and their families address barriers to care, such as lack of insurance coverage¹¹ and travel times.¹² Gender-affirming care is associated with decreased rates of long-term adverse outcomes among TNB youths. Specifically, PBs, GAHs, and gender-affirming surgeries have all been found to be independently associated with decreased rates of depression, anxiety, and other adverse mental health outcomes.¹³⁻¹⁶ Access to these interventions is also associated with a decreased lifetime incidence of suicidal ideation among adults who had access to PBs during adolescence.¹⁷ Conversely, TNB youths who present to care later in adolescence or young adulthood experience more adverse mental health outcomes.¹⁸ Despite this robust evidence base, legislation criminalizing and thus limiting access to gender-affirming medical care for minors is increasing.^{19,20}

Less is known about the association of gender-affirming care with mental health outcomes immediately after initiation of care. Several studies published from 2015 to 2020 found that receipt of PBs or GAHs was associated with improved psychological functioning²¹ and body satisfaction,²² as well as decreased depression²³ and suicidality²⁴ within a 1-year period. Initiation of gender-affirming care may be associated with improved short-term mental health owing to validation of gender identity and clinical staff support. Conversely, prerequisite mental health evaluations, often perceived as pathologizing by TNB youths, and initiation of GAHs may present new stressors that may be associated with exacerbation of mental health symptoms early in care, such as experiences of discrimination associated with more frequent points of engagement in a largely cisnormative health care system (eg, interactions with nonaffirming pharmacists to obtain laboratory tests, syringes, and medications).²⁵ Given the high risk of suicidality among TNB adolescents, there is a pressing need to better characterize mental health trends for TNB youths early in gender-affirming care. This study aimed to investigate changes in mental health among TNB youths enrolled in an urban multidisciplinary gender clinic over the first 12 months of receiving care. We also sought to investigate whether initiation of PBs or GAHs was associated with depression, anxiety, and suicidality.

Methods

This cohort study received approval from the Seattle Children's Hospital Institutional Review Board. For youths younger than age 18 years, caregiver consent and youth assent was obtained. For youths ages 18 years and older, youth consent alone was obtained. The 12-month assessment was funded via a different mechanism than other survey time points; thus, participants were reconsented for the

12-month survey. The study follows the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guideline.

Study Procedures

We conducted a prospective observational cohort study of TNB youths seeking care at Seattle Children's Gender Clinic, an urban multidisciplinary gender clinic. After a referral is placed or a patient self-refers, new patients, their caregivers, or patients with their caregivers are scheduled for a 1-hour phone intake with a care navigator who is a licensed clinical social worker. Patients are then scheduled for an appointment at the clinic with a medical provider.

All patients who completed the phone intake and in-person appointment between August 2017 and June 2018 were recruited for this study. Participants completed baseline surveys within 24 hours of their first appointment and were invited to complete follow-up surveys at 3, 6, and 12 months. Youth surveys were used to assess most variables in this study; caregiver surveys were used to assess caregiver income. Participation and completion of study surveys had no bearing on prescribing of PBs or GAHs.

Measures

Mental Health Variables

We assessed 3 internalizing mental health outcomes: depression, generalized anxiety, and suicidality. Depression was assessed using the Patient Health Questionnaire 9-item scale (PHQ-9), and anxiety was assessed using the Generalized Anxiety Disorder 7-item scale (GAD-7). We dichotomized PHQ-9 and GAD-7 scores into measures of moderate or severe depression and anxiety (ie, scores ≥ 10).^{26,27} Self-harm and suicidal thoughts were assessed using PHQ-9 question 9 (eTable 1 in the Supplement).

Pharmacological Interventions

Participants self-reported if they had ever received GAHs, including estrogen or testosterone, or PBs (eg, gonadotropin-releasing hormone analogues) on each survey. We conducted a medical record review to capture prescription of androgen blockers (eg, spironolactone) and medications for menstrual suppression or contraception (ie, medroxyprogesterone acetate or levonorgestrel-releasing intrauterine device) during the study period.

Covariates

We a priori considered potential confounders hypothesized to be associated with our exposures and outcomes of interest based on theory and prior research. Self-reported gender was ascertained on each survey using a 2-step question that asked participants about their current gender and their sex assigned at birth. If a participant's self-reported gender changed across surveys, we used the gender reported most frequently by a participant (3 individuals identified as transmasculine at baseline and as nonbinary on all follow-up surveys). We collected data on self-reported race and ethnicity (available response options were Arab or Middle Eastern; Asian; Black or African American; Latinx; Native American, American Indian, or Alaskan Native or Native Hawaiian; Pacific Islander; and White), age, caregiver income, and insurance type. Race and ethnicity were assessed as potential covariates owing to known barriers to accessing gender-affirming care among transgender youth who are members of minority racial and ethnic groups. For descriptive statistics, Asian and Pacific Islander groups were combined owing to small population numbers. We included a baseline variable reflecting receipt of ongoing mental health therapy other than for the purpose of a mental health assessment to receive a gender dysphoria diagnosis. We included a self-report variable reflecting whether youths felt their gender identity or expression was a source of tension with their parents or guardians. Substance use included any alcohol, marijuana, or other drug use in the past year. Resilience was measured by the Connor-Davidson Resilience Scale (CD-RISC) 10-item score developed to measure change in an individual's state resilience over time.²⁸ Resilience scores were

dichotomized into high (ie, \geq median) and low (ie, $<$ median). Prior studies of young adults in the US reported mean CD-RISC scores ranging from 27.2 to 30.1.^{29,30}

Statistical Analysis

We used generalized estimating equations to assess change in outcomes from baseline at each follow-up point (eFigure 1 in the Supplement). We used a logit link function to estimate adjusted odds ratio (aOR) for the association between variables and each mental health outcome. We initially estimated bivariate associations between potential confounders and mental health outcomes. Multivariable models included variables that were statistically significant in bivariate models. For all outcomes and models, statistical significance was defined as 95% CIs that did not contain 1.00. Reported *P* values are based on 2-sided Wald test statistics.

Model 1 examined temporal trends in mental health outcomes, with time (ie, baseline, 3, 6, and 12 months) modeled as a categorical variable. Model 2 estimated the association between receipt of PBs or GAHs and mental health outcomes adjusted for temporal trends and potential confounders. Receipt of PBs or GAHs was modeled as a composite binary time-varying exposure that compared mean outcomes between participants who had initiated PBs or GAHs and those who had not across all time points (eTable 2 in the Supplement). All models used an independent working correlation structure and robust standard errors to account for the time-varying exposure variable.

We performed several sensitivity analyses. Because our data were from an observational cohort, we first considered the degree to which they were sensitive to unmeasured confounding. To do this, we calculated the E-value for the association between PBs or GAHs and mental health outcomes in model 2. The E-value is defined as the minimum strength of association that a confounder would need to have with both exposure and outcome to completely explain away their association (eTable 4 in the Supplement).³¹ Second, we performed sensitivity analyses on several subsets of youths. We separately examined the association of PBs and GAHs with outcomes of interest, although we a priori did not anticipate being powered to detect statistically significant outcomes owing to our small sample size and the relatively low proportion of youths who accessed PBs. We also conducted sensitivity analyses using the Patient Health Questionnaire 8-item scale (PHQ-8), in which the PHQ-9 question 9 regarding self-harm or suicidal thoughts was removed, given that we analyzed this item as a separate outcome. Lastly, we restricted our analysis to minor youths ages 13 to 17 years because they were subject to different laws and policies related to consent and prerequisite mental health assessments. We used R statistical software version 3.6.2 (R Project for Statistical Computing) to conduct all analyses. Data were analyzed from August 2020 through November 2021.

Results

A total of 169 youths were screened for eligibility during the study period, among whom 161 eligible youths were approached. Nine youths or caregivers declined participation, and 39 youths did not complete consent or assent or did not complete the baseline survey, leaving a sample of 113 youths (70.2% of approached youths). We excluded 9 youths aged younger than 13 years from the analysis because they received different depression and anxiety screeners. Our final sample included 104 youths ages 13 to 20 years (mean [SD] age, 15.8 [1.6] years). Of these individuals, 84 youths (80.8%), 84 youths, and 65 youths (62.5%) completed surveys at 3, 6, and 12 months, respectively.

Our cohort included 63 transmasculine youths (60.6%), 27 transfeminine youths (26.0%), 10 nonbinary or gender fluid youths (9.6%), and 4 youths who responded "I don't know" or did not respond to the gender identity question on all completed questionnaires (3.8%) (Table 1). There were 4 Asian or Pacific Islander youths (3.8%), 3 Black or African American youths (2.9%); 9 Latinx youths (8.7%); 6 Native American, American Indian, or Alaskan Native or Native Hawaiian youths (5.8%); 67 White youths (64.4%); and 9 youths who reported more than 1 race or ethnicity (8.7%). Race and ethnicity data were missing for 6 youth (5.8%).

Table 1. Participant Characteristics

Characteristic	Participants, No. (%) (N = 104)
Gender	
Male or transgender male	63 (60.6)
Female or transgender female	27 (26.0)
Nonbinary or gender fluid	10 (9.6)
Don't know or missing	4 (3.8)
Race and ethnicity^a	
Asian or Pacific Islander	4 (3.8)
Black or African American	3 (2.9)
Latinx	9 (8.7)
Native American, American Indian, or Alaskan Native or Native Hawaiian	6 (5.8)
White	67 (64.4)
More than 1 race or ethnicity chosen	9 (8.7)
Missing	6 (5.8)
Age at baseline, y	
13	8 (7.7)
14	20 (19.2)
15	18 (17.3)
16	22 (21.2)
17	22 (21.2)
18	8 (7.7)
19	5 (4.8)
20	1 (1.0)
Pharmacological intervention	
PBs ^b	19 (18.2)
GAHs ^b	64 (61.5)
Androgen blockers ^c	17 (51.5)
Menstrual suppression or contraception ^d	25 (35.2)
Depression at baseline (using PHQ-9)	
0-4 (minimal)	14 (13.5)
5-9 (mild)	27 (26.0)
10-14 (moderate)	22 (21.2)
15-19 (moderately severe)	11 (10.6)
≥20 (severe)	26 (25.0)
Missing	4 (3.8)
Anxiety at baseline (using GAD-7)	
0-4 (minimal)	20 (19.2)
5-9 (mild)	28 (26.9)
10-14 (moderate)	20 (19.2)
≥15 (severe)	32 (30.8)
Missing	4 (3.8)
Self-harm or suicidal thoughts at baseline	45 (43.2)
Receiving mental health therapy	65 (62.5)
Tension with caregiver about gender identity or expression	36 (34.6)
Any substance use	34 (32.7)
Resilience at baseline (using CD-RISC 10)	
0-10	8 (7.7)
10-20	35 (33.7)
21-30	15 (14.4)
30-40	34 (32.7)
Missing	12 (11.5)

Abbreviations: CD-RISC 10, Connor-Davidson 10-item Resilience Scale; GAD-7, Generalized Anxiety Disorder 7-item scale; GAH, gender-affirming hormone; PB, puberty blocker; PHQ-9 Patient Health Questionnaire 9-item scale.

^a Available response options for race and ethnicity were Arab or Middle Eastern; Asian or Pacific Islander; Black or African American; Latinx; Native American, American Indian, or Alaskan Native or Native Hawaiian; Pacific Islander; and White. Asian and Pacific Islander groups were combined owing to small population sizes.

^b Self-reported receipt ever of PBs or GAHs at baseline or through the end of the study period.

^c Includes androgen blockers received during the study period; percentage is among 33 youths assigned male sex at birth.

^d Includes pharmacological interventions for menstrual suppression or contraception received during the study period; percentage is among 71 youths assigned female sex at birth.

At baseline, 7 youths had ever received PBs or GAHs (including 1 youth who received PBs, 4 youths who received GAHs, and 2 youths who received both PBs and GAHs). By the end of the study, 69 youths (66.3%) had received PBs or GAHs (including 50 youths who received GAHs only [48.1%], 5 youths who received PBs only [4.8%], and 14 youths who received PBs and GAHs [13.5%]), while 35 youths had not received either PBs or GAHs (33.7%) (eTable 3 in the Supplement). Among 33 participants assigned male sex at birth, 17 individuals (51.5%) had received androgen blockers, and among 71 participants assigned female sex at birth, 25 individuals (35.2%) had received menstrual suppression or contraceptives by the end of the study.

A large proportion of youths reported depressive and anxious symptoms at baseline. Specifically, 59 individuals (56.7%) had baseline PHQ-9 scores of 10 or more, suggesting moderate to severe depression; there were 22 participants (21.2%) scoring in the moderate range, 11 participants (10.6%) in the moderately severe range, and 26 participants (25.0%) in the severe range. Similarly, half of participants had a GAD-7 score suggestive of moderate to severe anxiety at baseline (52 individuals [50.0%]), including 20 participants (19.2%) scored in the moderate range, and 32 participants (30.8%) scored in the severe range. There were 45 youths (43.3%) who reported self-harm or suicidal thoughts in the prior 2 weeks. At baseline, 65 youths (62.5%) were receiving ongoing mental health therapy, 36 youths (34.6%) reported tension with their caregivers about their gender identity or expression, and 34 youths (32.7%) reported any substance use in the prior year. Lastly, we observed a wide range of resilience scores (median [range], 22.5 [1-38], with higher scores equaling more resiliency). There were no statistically significant differences in baseline characteristics by gender.

In bivariate models, substance use was associated with all mental health outcomes (**Table 2**). Youths who reported any substance use were 4-fold as likely to have PHQ-9 scores of moderate to severe depression (aOR, 4.38; 95% CI, 2.10-9.16) and 2-fold as likely to have GAD-7 scores of moderate to severe anxiety (aOR, 2.07; 95% CI, 1.04-4.11) or report thoughts of self-harm or suicide in the prior 2 weeks (aOR, 2.06; 95% CI, 1.08-3.93). High resilience scores (ie, \geq median), compared with low resilience scores (ie, $<$ median), were associated with lower odds of moderate or severe anxiety (aOR, 0.51; 95% CI, 0.26-0.999).

There were no statistically significant temporal trends in the bivariate model or model 1 (**Table 2** and **Table 3**). However, among all participants, odds of moderate to severe depression increased at 3 months of follow-up relative to baseline (aOR, 2.12; 95% CI, 0.98-4.60), which was not a significant increase, and returned to baseline levels at months 6 and 12 (**Figure**) prior to adjusting for receipt of PBs or GAHs.

We also examined the association between receipt of PBs or GAHs and mental health outcomes in bivariate and multivariable models (eFigure 2 in the Supplement). After adjusting for temporal trends and potential confounders (**Table 4**), we observed that youths who had initiated PBs or GAHs had 60% lower odds of moderate to severe depression (aOR, 0.40; 95% CI, 0.17-0.95) and 73% lower odds of self-harm or suicidal thoughts (aOR, 0.27; 95% CI, 0.11-0.65) compared with youths who had not yet initiated PBs or GAHs. There was no association between receipt of PBs or GAHs and moderate to severe anxiety (aOR, 1.01; 95% CI, 0.41-2.51). After adjusting for time-varying exposure of PBs or GAHs in model 2 (**Table 4**), we observed statistically significant increases in moderate to severe depression among youths who had not received PBs or GAHs by 3 months of follow-up (aOR, 3.22; 95% CI, 1.37-7.56). A similar trend was observed for self-harm or suicidal thoughts among youths who had not received PBs or GAHs by 6 months of follow-up (aOR, 2.76; 95% CI, 1.22-6.26). Lastly, we estimated E-values of 2.56 and 3.25 for the association between receiving PGs or GAHs and moderate to severe depression and suicidality, respectively (eTable 4 in the Supplement). Sensitivity analyses obtained comparable results and are presented in eTables 5 through 8 in the Supplement.

Table 2. Baseline Factors Associated With Mental Health Outcomes in Bivariate Models

Factor	Moderate or severe depression (PHQ-9 \geq 10) ^a		Moderate or severe anxiety (GAD-7 \geq 10) ^b		Any self-harm or suicidal thoughts ^c	
	aOR (95% CI)	P value	aOR (95% CI)	P value	aOR (95% CI)	P value
PBs or GAHs	0.67 (0.33-1.34)	.25	0.90 (0.49-1.66)	.74	0.47 (0.26-0.86)	.01
Time, mo						
0 (baseline)	1 [Reference]	NA	1 [Reference]	NA	1 [Reference]	NA
3	1.96 (0.99-3.90)	.05	1.46 (0.71-2.97)	.30	1.00 (0.49-2.06)	.99
6	1.01 (0.46-2.19)	.99	0.77 (0.39-1.52)	.45	1.22 (0.64-2.34)	.54
12	1.42 (0.55-3.66)	.47	0.95 (0.43-2.06)	.89	1.02 (0.41-2.52)	.97
Gender						
Male or transgender male	1 [Reference]	NA	1 [Reference]	NA	1 [Reference]	NA
Female or transgender female	1.07 (0.51-2.24)	.87	3.15 (0.92-10.8)	.07	1.20 (0.55-2.64)	.64
Nonbinary or gender fluid	2.40 (0.84-6.87)	.10	1.35 (0.67-2.72)	.40	2.17 (0.73-6.41)	.16
Race or ethnicity						
White	1 [Reference]	NA	1 [Reference]	NA	1 [Reference]	NA
Member of minority race or ethnic group ^d	1.08 (0.51-2.28)	.84	0.86 (0.45-1.66)	.66	0.92 (0.53-1.61)	.77
Age, y						
13-15	1 [Reference]	NA	1 [Reference]	NA	1 [Reference]	NA
16-17	1.79 (0.82-3.88)	.14	0.63 (0.29-1.39)	.25	0.86 (0.44-1.68)	.66
18-20	0.78 (0.24-2.51)	.68	1.17 (0.43-3.17)	.76	0.79 (0.36-1.74)	.55
Mental health and substance use at baseline						
Moderate or severe depression (PHQ-9 \geq 10)	27.2 (13.4-55.4)	<.001	1.91 (0.85-4.29)	.12	1.06 (0.50-2.24)	.88
Moderate or severe anxiety (GAD-7 \geq 10)	4.90 (2.27-10.6)	<.001	14.3 (7.31-27.9)	<.001	1.44 (0.76-2.72)	.27
Self-harm or suicidal thoughts	1.32 (0.61-2.85)	.48	1.49 (0.73-3.06)	.28	18.9 (10.4-34.1)	<.001
Receiving mental health therapy	1.46 (0.69-3.08)	.32	0.65 (0.31-1.38)	.26	0.75 (0.36-1.56)	.45
Tension with caregivers about gender identity or expression	1.93 (0.90-4.14)	.09	1.06 (0.52-2.15)	.87	1.55 (0.88-2.74)	.13
Any substance use	4.38 (2.10-9.16)	<.001	2.07 (1.04-4.11)	.04	2.06 (1.08-3.93)	.03
Resilience at baseline (CD-RISC 10 \geq 22.5) ^e	0.85 (0.42-1.74)	.67	0.51 (0.26-1.00)	.05	0.74 (0.39-1.44)	.38

Abbreviations: aOR, adjusted odds ratio; CD-RISC 10, Connor-Davidson 10-item Resilience Scale; GAD-7, Generalized Anxiety Disorder 7-item scale; GAH, gender-affirming hormone; NA, not applicable; PB, puberty blocker; PHQ-9, Patient Health Questionnaire 9-item scale.

^a Bivariate models are adjusted for baseline PHQ-9.

^b Bivariate models are adjusted for baseline GAD-7.

^c Bivariate models are adjusted for self-harm or suicidal thoughts reported at baseline.

^d Owing to small sample sizes, this group includes Asian or Pacific Islander; Black or African American; Latinx; and Native American, American Indian, Alaskan Native, or Native Hawaiian youths and youths who reported more than 1 race or ethnicity.

^e The median (range) CD-RISC score for the cohort was 22.5 (1-38).

Table 3. Temporal Trends in Mental Health Outcomes in Multivariable Model 1^a

Factor	Moderate or severe depression (PHQ-9 \geq 10)		Moderate or severe anxiety (GAD-7 \geq 10)		Any self-harm or suicidal thoughts	
	aOR (95% CI)	P value	aOR (95% CI)	P value	aOR (95% CI)	P value
Time, mo						
0 (baseline)	1 [Reference]	NA	1 [Reference]	NA	1 [Reference]	NA
3	2.12 (0.98-4.60)	.06	1.50 (0.71-3.15)	.29	0.99 (0.48-2.06)	.98
6	0.99 (0.42-2.35)	.98	0.78 (0.38-1.59)	.49	1.22 (0.63-2.36)	.56
12	1.27 (0.44-3.67)	.66	0.96 (0.43-2.11)	.91	0.98 (0.39-2.48)	.97
Mental health and substance use at baseline						
Moderate or severe depression (PHQ-9 \geq 10)	18.5 (8.44-40.5)	<.001	NA	NA	NA	NA
Moderate or severe anxiety (GAD-7 \geq 10)	3.63 (1.83-7.19)	<.001	12.4 (6.25-24.7)	<.001	NA	NA
Self-harm or suicidal thoughts	NA	NA	NA	NA	19.9 (10.9-36.1)	<.001
Any substance use	3.35 (1.56-7.18)	.002	2.21 (1.09-4.49)	.03	2.07 (1.09-3.93)	.03
Resilience at Baseline (CD-RISC 10 \geq 22.5) ^b	NA	NA	0.48 (0.24-0.95)	.04	NA	NA

Abbreviations: aOR, adjusted odds ratio; CD-RISC 10, Connor-Davidson 10-item Resilience Scale; GAD-7, Generalized Anxiety Disorder 7-item scale; NA, not applicable; PHQ-9, Patient Health Questionnaire 9-item scale.

^a Model 1 includes categorical temporal variables (ie, months 3, 6, and 12 relative to baseline) and covariates that were statistically significant in bivariate models (such that

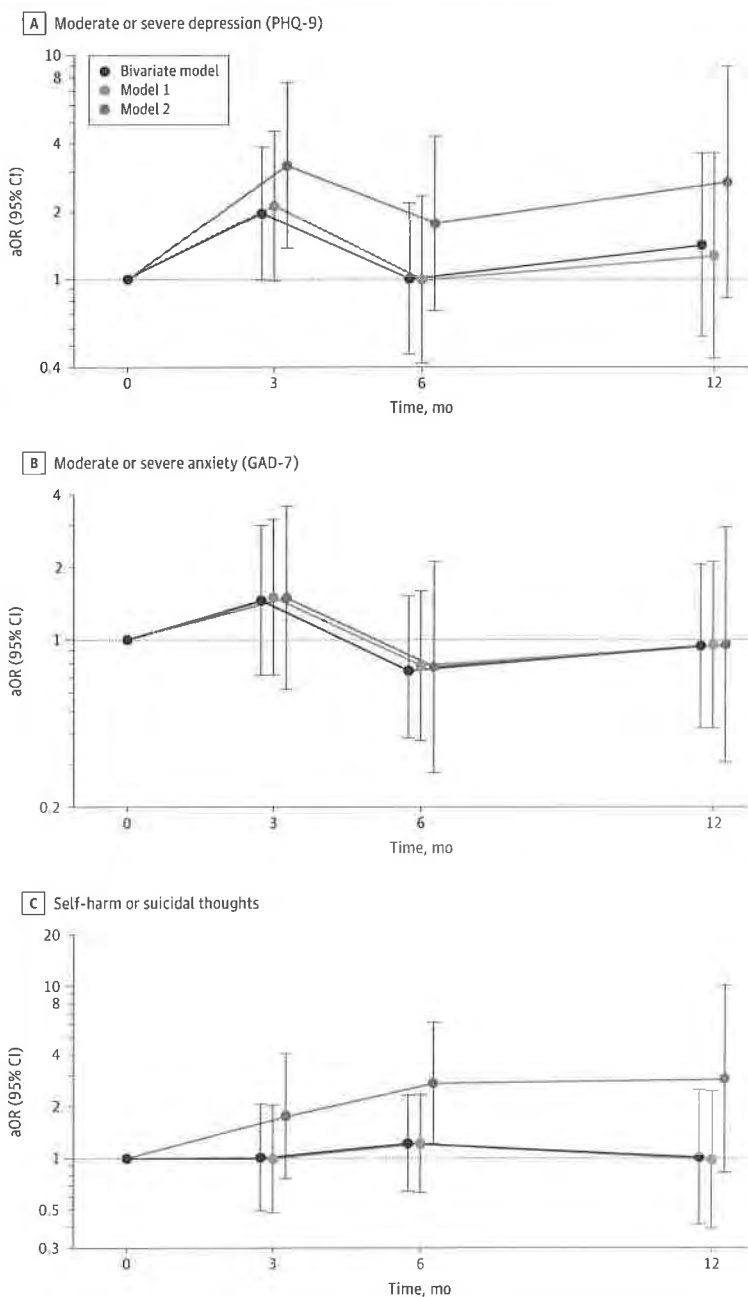
95% CIs did not contain 1.00) (see Table 2). Covariates that were not significant in bivariate models are marked NA.

^b The median (range) CD-RISC score for the cohort is 22.5 (1-38).

Discussion

In this prospective clinical cohort study of TNB youths, we observed high rates of moderate to severe depression and anxiety, as well as suicidal thoughts. Receipt of gender-affirming interventions, specifically PBs or GAHs, was associated with 60% lower odds of moderate to severe depressive symptoms and 73% lower odds of self-harm or suicidal thoughts during the first year of multidisciplinary gender care. Among youths who did not initiate PBs or GAHs, we observed that depressive symptoms and suicidality were 2-fold to 3-fold higher than baseline levels at 3 and 6 months of follow-up, respectively. Our study results suggest that risks of depression and suicidality

Figure. Temporal Trends in Mental Health Outcomes



Outcomes are estimated from bivariate and multivariable generalized estimating equation models. aOR, indicates adjusted odds ratio; GAD-7, Generalized Anxiety Disorder 7-item scale; PHQ-9, Patient Health Questionnaire 9-item scale; whiskers, 95% CIs.

may be mitigated with receipt of gender-affirming medications in the context of a multidisciplinary care clinic over the relatively short time frame of 1 year.

Our findings are consistent with those of prior studies finding that TNB adolescents are at increased risk of depression, anxiety, and suicidality^{1,11,32} and studies finding long-term and short-term improvements in mental health outcomes among TNB individuals who receive gender-affirming medical interventions.^{14,21-24,33,34} Surprisingly, we observed no association with anxiety scores. A recent cohort study of TNB youths in Dallas, Texas, found that total anxiety symptoms improved over a longer follow-up of 11 to 18 months; however, similar to our study, the authors did not observe statistically significant improvements in generalized anxiety.²² This suggests that anxiety symptoms may take longer to improve after the initiation of gender-affirming care. In addition, Olson et al³⁵ found that prepubertal TNB children who socially transitioned did not have increased rates of depression symptoms but did have increased rates of anxiety symptoms compared with children who were cisgender. Although social transition and access to gender-affirming medical care do not always go hand in hand, it is noteworthy that access to gender-affirming medical care and supported social transition appear to be associated with decreased depression and suicidality more than anxiety symptoms.

Time trends were not significant in our study; however, it is important to note that we observed a transient and nonsignificant worsening in mental health outcomes in the first several months of care among all participants and that these outcomes subsequently returned to baseline by 12 months. This is consistent with findings from a 2020 study³⁶ in an academic medical center in the northwestern US that observed no change in TNB adolescents' GAD-7 or PHQ-9 scores from intake to first follow-up appointment, which occurred a mean of 4.7 months apart. Given that receipt of PBs or GAHs was associated with protection against depression and suicidality in our study, it could be that delays in receipt of medications is associated with initially exacerbated mental health symptoms that subsequently improve. It is also possible that mental health improvements associated with receiving these interventions may have a delayed onset, given the delay in physical changes after starting GAHs.

Few of our hypothesized confounders were associated with mental health outcomes in this sample, most notably receipt of ongoing mental health therapy and caregiver support; however, this

Table 4. Association Between GAHs or PBs and Mental Health Outcomes in Multivariable Model 2^a

Factor	Moderate or severe depression (PHQ-9 ≥10)		Moderate or severe anxiety (GAD-7 ≥10)		Any self-harm or suicidal thoughts	
	aOR (95% CI)	P value	aOR (95% CI)	P value	aOR (95% CI)	P value
PBs or GAHs	0.40 (0.17-0.95)	.04	1.01 (0.41-2.51)	.98	0.27 (0.11-0.65)	.003
Time, mo						
0 (baseline)	1 [Reference]	NA	1 [Reference]	NA	1 [Reference]	NA
3 mo	3.22 (1.37-7.56)	.007	1.49 (0.62-3.59)	.37	1.77 (0.76-4.13)	.19
6 mo	1.77 (0.72-4.37)	.21	0.77 (0.28-2.11)	.61	2.76 (1.22-6.26)	.02
12 mo	2.71 (0.82-8.95)	.10	0.95 (0.31-2.93)	.93	2.93 (0.83-10.4)	.10
Mental health & substance use at baseline						
Moderate or severe depression (PHQ-9 ≥10)	19.4 (8.64-43.4)	<.001	NA	NA	NA	NA
Moderate or severe anxiety (GAD-7 ≥10)	3.82 (1.87-7.82)	<.001	12.4 (6.25-24.7)	<.001	NA	NA
Self-harm or suicidal thoughts	NA	NA	NA	NA	23.9 (12.9-44.5)	<.001
Any substance use	3.20 (1.49-6.84)	.003	2.21 (1.09-4.50)	.03	2.00 (1.08-3.73)	.03
Resilience at baseline (CD-RISC 10 ≥22.5) ^b	NA	NA	0.48 (0.24-0.95)	.04	NA	NA

Abbreviations: aOR, adjusted odds ratio; CD-RISC 10, Connor-Davidson 10-item Resilience Scale; GAD-7, Generalized Anxiety Disorder 7-item scale; GAH, gender-affirming hormone; NA, not applicable; PB, puberty blocker; PHQ-9, Patient Health Questionnaire 9-item scale.

^a Model 2 includes a time-varying exposure variable measuring the receipt of PBs or GAHs adjusted for temporal trend (ie, categorical variable for months 3, 6, and 12

relative to baseline) and covariates that were statistically significant in the bivariate models (such that 95% CIs did not contain 1.00) (see Table 2). The unadjusted bivariate associations between PBs or GAHs and mental health outcomes are reported in Table 2. Covariates that were not significant in bivariate models are marked NA.

^b The median (range) CD-RISC score for the cohort is 22.5 (1-38).

is not surprising given that these variables were colinear with baseline mental health, which we adjusted for in all models. Substance use was the only variable associated with all mental health outcomes. In addition, youths with high baseline resilience scores were half as likely to experience moderate to severe anxiety as those with low scores. This finding suggests that substance use and resilience may be additional modifiable factors that could be addressed through multidisciplinary gender-affirming care. We recommend more granular assessment of substance use and resilience to better understand support needs (for substance use) and effective support strategies (for resilience) for TNB youths in future research.

This study has a number of strengths. This is one of the first studies to quantify a short-term transient increase in depressive symptoms experienced by TNB youths after initiating gender-affirming care, a phenomenon observed clinically by some of the authors and described in qualitative research.³⁷ Although we are unable to make causal statements owing to the observational design of the study, the strength of associations between gender-affirming medications and depression and suicidality, with large aOR values, and sensitivity analyses that suggest that these findings are robust to moderate levels of unmeasured confounding. Specifically, E-values calculated for this study suggest that the observed associations could be explained away only by an unmeasured confounder that was associated with both PBs and GAHs and the outcomes of interest by a risk ratio of 2-fold to 3-fold each, above and beyond the measured confounders, but that weaker confounding could not do so.³¹

Limitations

Our findings should be interpreted in light of the following limitations. This was a clinical sample of TNB youths, and there was likely selection bias toward youths with supportive caregivers who had resources to access a gender-affirming care clinic. Family support and access to care are associated with protection against poor mental health outcomes, and thus actual rates of depression, anxiety, and suicidality in nonclinical samples of TNB youths may differ. Youths who are unable to access gender-affirming care owing to a lack of family support or resources require particular emphasis in future research and advocacy. Our sample also primarily included White and transmasculine youths, limiting the generalizability of our findings. In addition, the need to reapproach participants for consent and assent for the 12-month survey likely contributed to attrition at this time point. There may also be residual confounding because we were unable to include a variable reflecting receipt of psychotropic medications that could be associated with depression, anxiety, and self-harm and suicidal thought outcomes. Additionally, we used symptom-based measures of depression, anxiety, and suicidality; further studies should include diagnostic evaluations by mental health practitioners to track depression, anxiety, gender dysphoria, suicidal ideation, and suicide attempts during gender care.²

Conclusions

Our study provides quantitative evidence that access to PBs or GAHs in a multidisciplinary gender-affirming setting was associated with mental health improvements among TNB youths over a relatively short time frame of 1 year. The associations with the highest aORs were with decreased suicidality, which is important given the mental health disparities experienced by this population, particularly the high levels of self-harm and suicide. Our findings have important policy implications, suggesting that the recent wave of legislation restricting access to gender-affirming care¹⁹ may have significant negative outcomes in the well-being of TNB youths.²⁰ Beyond the need to address antitransgender legislation, there is an additional need for medical systems and insurance providers to decrease barriers and expand access to gender-affirming care.

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Corresponding Author: Diana M. Tordoff, MPH, Department of Epidemiology, University of Washington, UW Box 351619, Seattle, WA 98195 (dtordoff@uw.edu).

Author Affiliations: Department of Epidemiology, University of Washington, Seattle (Tordoff); Department of Psychiatry and Behavioral Sciences, University of Washington, Seattle (Wanta); School of Medicine, University of Washington, Seattle (Collin); Department of Psychiatry and Behavioral Medicine, Department of Adolescent and Young Adult Medicine, Seattle Children's Hospital, Seattle, Washington (Stepney); University of California, San Diego School of Medicine, Rady Children's Hospital (Inwards-Breland); Division of Adolescent Medicine, Department of Pediatrics, Seattle Children's Hospital, Seattle, Washington (Ahrens).

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SUPPLEMENT.

eTable 1. Survey Instruments

eTable 2. Prevalence of Exposure Over Time

eTable 3. Prevalence of Outcomes Over Time by Exposure Group

eTable 4. E-Value Calculation for Association Between Puberty Blockers or Gender-Affirming Hormones and Mental Health Outcomes

eTable 5. Examining Association Between Puberty Blockers or Gender-Affirming Hormones and Mental Health Outcomes Separately

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eFigure 1. Schematic of Generalized Estimating Equation Model

eFigure 2. Association Between Receipt of Gender-Affirming Hormones or Puberty Blockers and Mental Health Outcomes

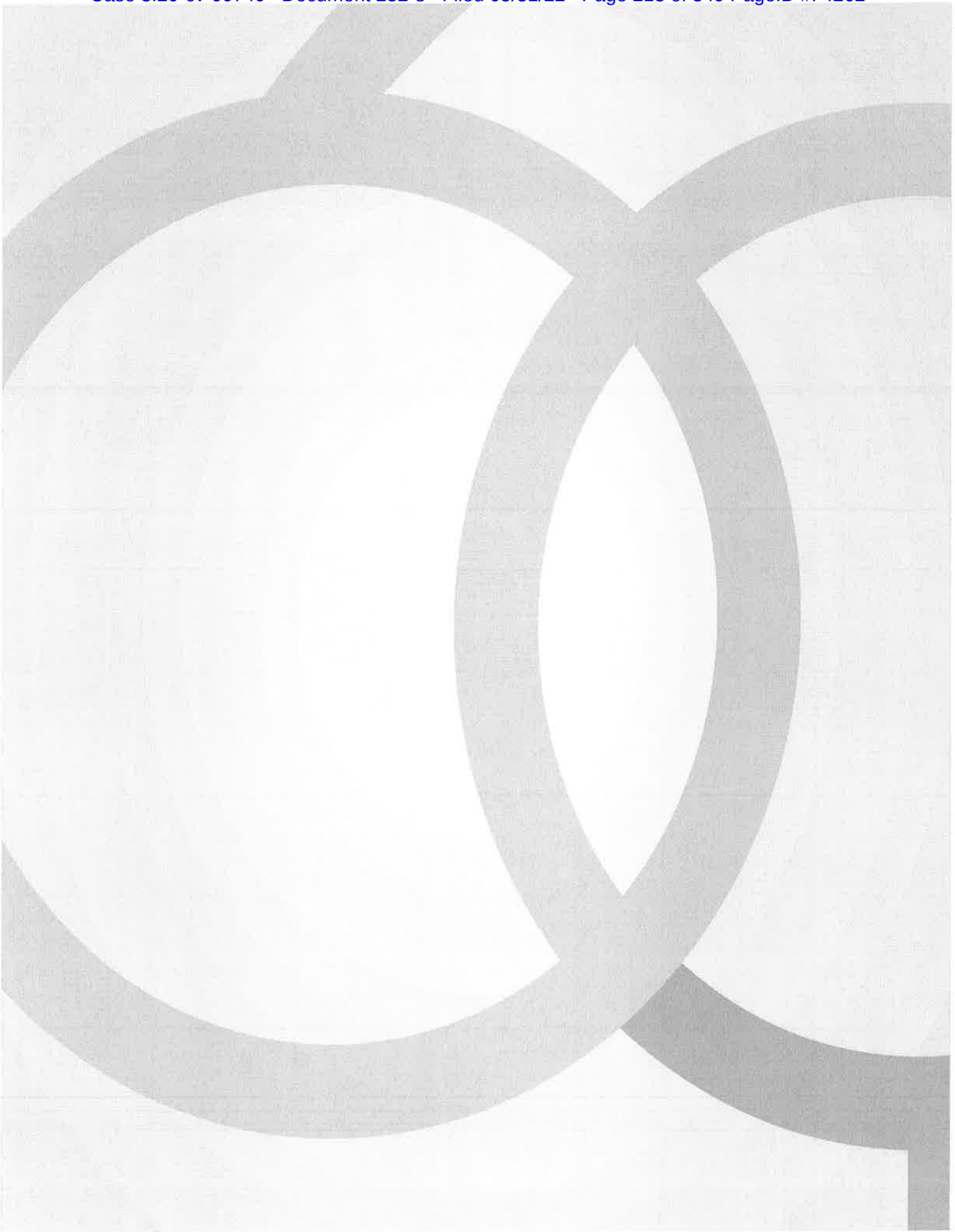
eReferences



Standards of Care

for the Health of Transsexual,
Transgender, and Gender-
Nonconforming People

The World Professional Association for Transgender Health





Standards of Care for the Health of Transsexual, Transgender, and Gender- Nonconforming People

Eli Coleman, Walter Bockting, Marsha Botzer, Peggy Cohen-Kettenis, Griet DeCuypere, Jamie Feldman, Lin Fraser, Jamison Green, Gail Knudson, Walter J. Meyer, Stan Monstrey, Richard K. Adler, George R. Brown, Aaron H. Devor, Randall Ehrbar, Randi Ettner, Evan Eyler, Rob Garofalo, Dan H. Karasic, Arlene Istar Lev, Gal Mayer, Heino Meyer-Bahlburg, Blaine Paxton Hall, Friedmann Pfäfflin, Katherine Rachlin, Bean Robinson, Loren S. Schechter, Vin Tangpricha, Mick van Trotsenburg, Anne Vitale, Sam Winter, Stephen Whittle, Kevan R. Wylie & Ken Zucker

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Purpose and Use of the *Standards of Care*

The World Professional Association for Transgender Health (WPATH)^I 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. The vision of WPATH is a world wherein transsexual, transgender, and gender-nonconforming people benefit from access to evidence-based health care, social services, justice, and equality.

One of the main functions of WPATH is to promote the highest standards of health care for individuals through the articulation of *Standards of Care (SOC) for the Health of Transsexual, Transgender, and Gender Nonconforming People*. The SOC are based on the best available science and expert professional consensus.^{II} Most of the research and experience in this field comes from a North American and Western European perspective; thus, adaptations of the SOC to other parts of the world are necessary. Suggestions for ways of thinking about cultural relativity and cultural competence are included in this version of the SOC.

The overall goal of the SOC is to provide clinical guidance for health professionals to assist transsexual, transgender, and gender-nonconforming people with safe and effective pathways to achieving lasting personal comfort with their gendered selves, in order to maximize their overall health, psychological well-being, and self-fulfillment. This assistance may include primary care, gynecologic and urologic care, reproductive options, voice and communication therapy, mental health services (e.g., assessment, counseling, psychotherapy), and hormonal and surgical treatments. While this is primarily a document for health professionals, the SOC may also be used by individuals, their families, and social institutions to understand how they can assist with promoting optimal health for members of this diverse population.

WPATH recognizes that health is dependent upon not only good clinical care but also social and political climates that provide and ensure social tolerance, equality, and the full rights of citizenship. Health is promoted through public policies and legal reforms that promote tolerance and equity

I Formerly the Harry Benjamin International Gender Dysphoria Association

II The *Standards of Care (SOC), Version 7*, represents a significant departure from previous versions. Changes in this version are based upon significant cultural shifts, advances in clinical knowledge, and appreciation of the many health care issues that can arise for transsexual, transgender, and gender-nonconforming people beyond hormone therapy and surgery (Coleman, 2009a, b, c, d).

The Standards of Care
VERSION 7

for gender and sexual diversity and that eliminate prejudice, discrimination, and stigma. WPATH is committed to advocacy for these changes in public policies and legal reforms.

The *Standards of Care* Are Flexible Clinical Guidelines

The SOC 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).

As in all previous versions of the SOC, the criteria put forth in this document for hormone therapy and surgical treatments for gender dysphoria are clinical guidelines; individual health professionals and programs may modify them. Clinical departures from the SOC may come about because of a patient's unique anatomic, social, or psychological situation; an experienced health professional's evolving method of handling a common situation; a research protocol; lack of resources in various parts of the world; or the need for specific harm-reduction strategies. These departures should be recognized as such, explained to the patient, and documented through informed consent for quality patient care and legal protection. This documentation is also valuable for the accumulation of new data, which can be retrospectively examined to allow for health care—and the SOC—to evolve.

The SOC articulate standards of care but also acknowledge the role of making informed choices and the value of harm-reduction approaches. In addition, this version of the SOC recognizes and validates various expressions of gender that may not necessitate psychological, hormonal, or surgical treatments. Some patients who present for care will have made significant self-directed progress towards gender role changes, transition, or other resolutions regarding their gender identity or gender dysphoria. Other patients will require more intensive services. Health professionals can use the SOC to help patients consider the full range of health services open to them, in accordance with their clinical needs and goals for gender expression.



Global Applicability of the *Standards of Care*

While the *SOC* are intended for worldwide use, WPATH acknowledges that much of the recorded clinical experience and knowledge in this area of health care is derived from North American and Western European sources. From place to place, both across and within nations, there are differences in all of the following: social attitudes towards transsexual, transgender, and gender-nonconforming people; constructions of gender roles and identities; language used to describe different gender identities; epidemiology of gender dysphoria; access to and cost of treatment; therapies offered; number and type of professionals who provide care; and legal and policy issues related to this area of health care (Winter, 2009).

It is impossible for the *SOC* to reflect all of these differences. In applying these standards to other cultural contexts, health professionals must be sensitive to these differences and adapt the *SOC* according to local realities. For example, in a number of cultures, gender-nonconforming people are found in such numbers and living in such ways as to make them highly socially visible (Peletz, 2006). In settings such as these, it is common for people to initiate a change in their gender expression and physical characteristics while in their teens or even earlier. Many grow up and live in a social, cultural, and even linguistic context quite unlike that of Western cultures. Yet almost all experience prejudice (Peletz, 2006; Winter, 2009). In many cultures, social stigma towards gender nonconformity is widespread and gender roles are highly prescriptive (Winter et al., 2009). Gender-nonconforming people in these settings are forced to be hidden and, therefore, may lack opportunities for adequate health care (Winter, 2009).

The *SOC* are not intended to limit efforts to provide the best available care to all individuals. Health professionals throughout the world—even in areas with limited resources and training opportunities—can apply the many core principles that undergird the *SOC*. These principles include the following: Exhibit respect for patients with nonconforming gender identities (do not pathologize differences in gender identity or expression); provide care (or refer to knowledgeable colleagues) that affirms patients' gender identities and reduces the distress of gender dysphoria, when present; become knowledgeable about the health care needs of transsexual, transgender, and gender-nonconforming people, including the benefits and risks of treatment options for gender dysphoria; match the treatment approach to the specific needs of patients, particularly their goals for gender expression and need for relief from gender dysphoria; facilitate access to appropriate care; seek patients' informed consent before providing treatment; offer continuity of care; and be prepared to support and advocate for patients within their families and communities (schools, workplaces, and other settings).

Terminology is culture- and time-dependent and is rapidly evolving. It is important to use respectful language in different places and times, and among different people. As the SOC are translated into other languages, great care must be taken to ensure that the meanings of terms are accurately translated. Terminology in English may not be easily translated into other languages, and vice versa. Some languages do not have equivalent words to describe the various terms within this document; hence, translators should be cognizant of the underlying goals of treatment and articulate culturally applicable guidance for reaching those goals.



The Difference Between Gender Nonconformity and Gender Dysphoria

Being Transsexual, Transgender, or Gender-Nonconforming Is a Matter of Diversity, Not Pathology

WPATH released a statement in May 2010 urging the de-psychopathologization of gender nonconformity worldwide (WPATH Board of Directors, 2010). This statement noted that “the expression of gender characteristics, including identities, that are not stereotypically associated with one’s assigned sex at birth is a common and culturally diverse human phenomenon [that] should not be judged as inherently pathological or negative.”

Unfortunately, there is stigma attached to gender nonconformity in many societies around the world. Such stigma can lead to prejudice and discrimination, resulting in “minority stress” (I. H. Meyer, 2003). Minority stress is unique (additive to general stressors experienced by all people), socially based, and chronic, and may make transsexual, transgender, and gender-nonconforming individuals more vulnerable to developing mental health concerns such as anxiety and depression (Institute of Medicine, 2011). In addition to prejudice and discrimination in society at large, stigma can contribute to abuse and neglect in one’s relationships with peers and family members, which in turn can lead to psychological distress. However, these symptoms are socially induced and are not inherent to being transsexual, transgender, or gender-nonconforming.

Gender Nonconformity Is Not the Same as Gender Dysphoria

Gender nonconformity refers to the extent to which a person's gender identity, role, or expression differs from the cultural norms prescribed for people of a particular sex (Institute of Medicine, 2011). *Gender dysphoria* refers to 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). Only *some* gender-nonconforming people experience gender dysphoria at *some* point in their lives.

Treatment is available to assist people with such distress to explore their gender identity and find a gender role that is comfortable for them (Bockting & Goldberg, 2006). Treatment is individualized: What helps one person alleviate gender dysphoria might be very different from what helps another person. This process may or may not involve a change in gender expression or body modifications. Medical treatment options include, for example, feminization or masculinization of the body through hormone therapy and/or surgery, which are effective in alleviating gender dysphoria and are medically necessary for many people. Gender identities and expressions are diverse, and hormones and surgery are just two of many options available to assist people with achieving comfort with self and identity.

Gender dysphoria can in large part be alleviated through treatment (Murad et al., 2010). Hence, while transsexual, transgender, and gender-nonconforming people may experience gender dysphoria at some points in their lives, many individuals who receive treatment will find a gender role and expression that is comfortable for them, even if these differ from those associated with their sex assigned at birth, or from prevailing gender norms and expectations.

Diagnoses Related to Gender Dysphoria

Some people experience gender dysphoria at such a level that the distress meets criteria for a formal diagnosis that might be classified as a mental disorder. Such a diagnosis is not a license for stigmatization or for the deprivation of civil and human rights. Existing classification systems such as the *Diagnostic Statistical Manual of Mental Disorders (DSM)* (American Psychiatric Association, 2000) and the *International Classification of Diseases (ICD)* (World Health Organization, 2007) define hundreds of mental disorders that vary in onset, duration, pathogenesis, functional disability, and treatability. All of these systems attempt to classify clusters of symptoms and conditions, not the individuals themselves. A disorder is a description of something with which a person might struggle, not a description of the person or the person's identity.

Thus, transsexual, transgender, and gender-nonconforming individuals are not inherently disordered. Rather, the distress of gender dysphoria, when present, is the concern that might be diagnosable and for which various treatment options are available. The existence of a diagnosis for such dysphoria often facilitates access to health care and can guide further research into effective treatments.

Research is leading to new diagnostic nomenclatures, and terms are changing in both the *DSM* (Cohen-Kettenis & Pfäfflin, 2010; Knudson, De Cuypere, & Bockting, 2010b; Meyer-Bahlburg, 2010; Zucker, 2010) and the *ICD*. For this reason, familiar terms are employed in the *SOC* and definitions are provided for terms that may be emerging. Health professionals should refer to the most current diagnostic criteria and appropriate codes to apply in their practice areas.



Epidemiologic Considerations

Formal epidemiologic studies on the incidence^{III} and prevalence^{IV} of transsexualism specifically or transgender and gender-nonconforming identities in general have not been conducted, and efforts to achieve realistic estimates are fraught with enormous difficulties (Institute of Medicine, 2011; Zucker & Lawrence, 2009). Even if epidemiologic studies established that a similar proportion of transsexual, transgender, or gender-nonconforming people existed all over the world, it is likely that cultural differences from one country to another would alter both the behavioral expressions of different gender identities and the extent to which gender dysphoria—distinct from one’s gender identity—is actually occurring in a population. While in most countries, crossing normative gender boundaries generates moral censure rather than compassion, there are examples in certain cultures of gender-nonconforming behaviors (e.g., in spiritual leaders) that are less stigmatized and even revered (Besnier, 1994; Bolin, 1988; Chiñas, 1995; Coleman, Colgan, & Gooren, 1992; Costa & Matzner, 2007; Jackson & Sullivan, 1999; Nanda, 1998; Taywaditep, Coleman, & Dumronggittigule, 1997).

For various reasons, researchers who have studied incidence and prevalence have tended to focus on the most easily counted subgroup of gender-nonconforming individuals: transsexual individuals who experience gender dysphoria and who present for gender-transition-related care at specialist gender clinics (Zucker & Lawrence, 2009). Most studies have been conducted in European countries such as Sweden (Wälinder, 1968, 1971), the United Kingdom (Hoenig & Kenna, 1974),

III **incidence**—the number of new cases arising in a given period (e.g., a year)

IV **prevalence**—the number of individuals having a condition, divided by the number of people in the general population

the Netherlands (Bakker, Van Kesteren, Gooren, & Bezemer, 1993; Eklund, Gooren, & Bezemer, 1988; van Kesteren, Gooren, & Megens, 1996), Germany (Weitze & Osburg, 1996), and Belgium (De Cuypere et al., 2007). One was conducted in Singapore (Tsoi, 1988).

De Cuypere and colleagues (2007) reviewed such studies, as well as conducted their own. Together, those studies span 39 years. Leaving aside two outlier findings from Pauly in 1965 and Tsoi in 1988, ten studies involving eight countries remain. The prevalence figures reported in these ten studies range from 1:11,900 to 1:45,000 for male-to-female individuals (MtF) and 1:30,400 to 1:200,000 for female-to-male (FtM) individuals. Some scholars have suggested that the prevalence is much higher, depending on the methodology used in the research (e.g., Olyslager & Conway, 2007).

Direct comparisons across studies are impossible, as each differed in their data collection methods and in their criteria for documenting a person as transsexual (e.g., whether or not a person had undergone genital reconstruction, versus had initiated hormone therapy, versus had come to the clinic seeking medically supervised transition services). The trend appears to be towards higher prevalence rates in the more recent studies, possibly indicating increasing numbers of people seeking clinical care. Support for this interpretation comes from research by Reed and colleagues (2009), who reported a doubling of the numbers of people accessing care at gender clinics in the United Kingdom every five or six years. Similarly, Zucker and colleagues (2008) reported a four- to five-fold increase in child and adolescent referrals to their Toronto, Canada clinic over a 30-year period.

The numbers yielded by studies such as these can be considered minimum estimates at best. The published figures are mostly derived from clinics where patients met criteria for severe gender dysphoria and had access to health care at those clinics. These estimates do not take into account that treatments offered in a particular clinic setting might not be perceived as affordable, useful, or acceptable by all self-identified gender dysphoric individuals in a given area. By counting only those people who present at clinics for a specific type of treatment, an unspecified number of gender dysphoric individuals are overlooked.

Other clinical observations (not yet firmly supported by systematic study) support the likelihood of a higher prevalence of gender dysphoria: (i) Previously unrecognized gender dysphoria is occasionally diagnosed when patients are seen with anxiety, depression, conduct disorder, substance abuse, dissociative identity disorders, borderline personality disorder, sexual disorders, and disorders of sex development (Cole, O'Boyle, Emory, & Meyer III, 1997). (ii) Some crossdressers, drag queens/kings or female/male impersonators, and gay and lesbian individuals may be experiencing gender dysphoria (Bullough & Bullough, 1993). (iii) The intensity of some people's gender dysphoria fluctuates below and above a clinical threshold (Docter, 1988). (iv) Gender nonconformity among FtM individuals tends to be relatively invisible in many cultures, particularly to Western health

professionals and researchers who have conducted most of the studies on which the current estimates of prevalence and incidence are based (Winter, 2009).

Overall, the existing data should be considered a starting point, and health care would benefit from more rigorous epidemiologic study in different locations worldwide.



Overview of Therapeutic Approaches for Gender Dysphoria

Advancements in the Knowledge and Treatment of Gender Dysphoria

In the second half of the 20th century, awareness of the phenomenon of gender dysphoria increased when health professionals began to provide assistance to alleviate gender dysphoria by supporting changes in primary and secondary sex characteristics through hormone therapy and surgery, along with a change in gender role. Although Harry Benjamin already acknowledged a spectrum of gender nonconformity (Benjamin, 1966), the initial clinical approach largely focused on identifying who was an appropriate candidate for sex reassignment to facilitate a physical change from male to female or female to male as completely as possible (e.g., Green & Fleming, 1990; Hastings, 1974). This approach was extensively evaluated and proved to be highly effective. Satisfaction rates across studies ranged from 87% of MtF patients to 97% of FtM patients (Green & Fleming, 1990), and regrets were extremely rare (1–1.5% of MtF patients and <1% of FtM patients; Pfäfflin, 1993). Indeed, hormone therapy and surgery have been found to be medically necessary to alleviate gender dysphoria in many people (American Medical Association, 2008; Anton, 2009; World Professional Association for Transgender Health, 2008).

As the field matured, health professionals recognized that while many individuals need both hormone therapy and surgery to alleviate their gender dysphoria, others need only one of these treatment options and some need neither (Bockting & Goldberg, 2006; Bockting, 2008; Lev, 2004). 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. For others, changes in gender role and expression are sufficient to alleviate

gender dysphoria. Some patients may need hormones, a possible change in gender role, but not surgery; others may need a change in gender role along with surgery, but not hormones. In other words, treatment for gender dysphoria has become more individualized.

As a generation of transsexual, transgender, and gender-nonconforming individuals has come of age—many of whom have benefitted from different therapeutic approaches—they have become more visible as a community and demonstrated considerable diversity in their gender identities, roles, and expressions. Some individuals describe themselves not as gender-nonconforming but as unambiguously cross-sexed (i.e., as a member of the other sex; Bockting, 2008). Other individuals affirm their unique gender identity and no longer consider themselves to be either male or female (Bornstein, 1994; Kimberly, 1997; Stone, 1991; Warren, 1993). Instead, they may describe their gender identity in specific terms such as transgender, bigender, or genderqueer, affirming their unique experiences that may transcend a male/female binary understanding of gender (Bockting, 2008; Ekins & King, 2006; Nestle, Wilchins, & Howell, 2002). They may not experience their process of identity affirmation as a “transition,” because they never fully embraced the gender role they were assigned at birth or because they actualize their gender identity, role, and expression in a way that does not involve a change from one gender role to another. For example, some youth identifying as genderqueer have always experienced their gender identity and role as such (genderqueer). Greater public visibility and awareness of gender diversity (Feinberg, 1996) has further expanded options for people with gender dysphoria to actualize an identity and find a gender role and expression that are comfortable for them.

Health professionals can assist gender dysphoric individuals with affirming their gender identity, exploring different options for expression of that identity, and making decisions about medical treatment options for alleviating gender dysphoria.

Options for Psychological and Medical Treatment of Gender Dysphoria

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.

Options for Social Support and Changes in Gender Expression

In addition (or as an alternative) to the psychological- and medical-treatment options described above, other options can be considered to help alleviate gender dysphoria, for example:

- In-person and online peer support resources, groups, or community organizations that provide avenues for social support and advocacy;
- In-person and online support resources for families and friends;
- Voice and communication therapy to help individuals develop verbal and non-verbal communication skills that facilitate comfort with their gender identity;
- Hair removal through electrolysis, laser treatment, or waxing;
- Breast binding or padding, genital tucking or penile prostheses, padding of hips or buttocks;
- Changes in name and gender marker on identity documents.

VI

Assessment and Treatment of Children and Adolescents With Gender Dysphoria

There are a number of differences in the phenomenology, developmental course, and treatment approaches for gender dysphoria in children, adolescents, and adults. In children and adolescents, a rapid and dramatic developmental process (physical, psychological, and sexual) is involved and

there is greater fluidity and variability in outcomes, particularly in prepubertal children. Accordingly, this section of the SOC offers specific clinical guidelines for the assessment and treatment of gender dysphoric children and adolescents.

Differences Between Children and Adolescents with Gender Dysphoria

An important difference between gender dysphoric children and adolescents is in the proportion for whom dysphoria persists into adulthood. Gender dysphoria during childhood does not inevitably continue into adulthood.^v 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 6–23% of children (Cohen-Kettenis, 2001; Zucker & Bradley, 1995). Boys in these studies were more likely to identify as gay in adulthood than as transgender (Green, 1987; Money & Russo, 1979; Zucker & Bradley, 1995; Zuger, 1984). Newer studies, also including girls, showed a 12–27% persistence rate of gender dysphoria into adulthood (Drummond, Bradley, Peterson-Badali, & Zucker, 2008; Wallien & Cohen-Kettenis, 2008).

In contrast, the persistence of gender dysphoria into adulthood appears to be much higher for adolescents. No formal prospective studies exist. However, in a follow-up study of 70 adolescents who were diagnosed with gender dysphoria and given puberty-suppressing hormones, all continued with actual sex reassignment, beginning with feminizing/masculinizing hormone therapy (de Vries, Steensma, Doreleijers, & Cohen-Kettenis, 2010).

Another difference between gender dysphoric children and adolescents is in the sex ratios for each age group. In clinically referred, gender dysphoric children under age 12, the male/female ratio ranges from 6:1 to 3:1 (Zucker, 2004). In clinically referred, gender dysphoric adolescents older than age 12, the male/female ratio is close to 1:1 (Cohen-Kettenis & Pfäfflin, 2003).

As discussed in section IV and by Zucker and Lawrence (2009), formal epidemiologic studies on gender dysphoria—in children, adolescents, and adults—are lacking. Additional research is needed to refine estimates of its prevalence and persistence in different populations worldwide.

^v Gender-nonconforming behaviors in children may continue into adulthood, but such behaviors are not necessarily indicative of gender dysphoria and a need for treatment. As described in section III, gender dysphoria is not synonymous with diversity in gender expression.

Phenomenology in Children

Children as young as age two may show features that could indicate gender dysphoria. They may express a wish to be of the other sex and be unhappy about their physical sex characteristics and functions. In addition, they may prefer clothes, toys, and games that are commonly associated with the other sex and prefer playing with other-sex peers. There appears to be heterogeneity in these features: Some children demonstrate extremely gender-nonconforming behavior and wishes, accompanied by persistent and severe discomfort with their primary sex characteristics. In other children, these characteristics are less intense or only partially present (Cohen-Kettenis et al., 2006; Knudson, De Cuypere, & Bockting, 2010a).

It is relatively common for gender dysphoric children to have coexisting internalizing disorders such as anxiety and depression (Cohen-Kettenis, Owen, Kaijser, Bradley, & Zucker, 2003; Wallien, Swaab, & Cohen-Kettenis, 2007; Zucker, Owen, Bradley, & Ameeriar, 2002). The prevalence of autism spectrum disorders seems to be higher in clinically referred, gender dysphoric children than in the general population (de Vries, Noens, Cohen-Kettenis, van Berckelaer-Onnes, & Doreleijers, 2010).

Phenomenology in Adolescents

In most children, gender dysphoria will disappear before, or early in, puberty. However, in some children these feelings will intensify and body aversion will develop or increase as they become adolescents and their secondary sex characteristics develop (Cohen-Kettenis, 2001; Cohen-Kettenis & Pfäfflin, 2003; Drummond et al., 2008; Wallien & Cohen-Kettenis, 2008; Zucker & Bradley, 1995). Data from one study suggest that more extreme gender nonconformity in childhood is associated with persistence of gender dysphoria into late adolescence and early adulthood (Wallien & Cohen-Kettenis, 2008). Yet many adolescents and adults presenting with gender dysphoria do not report a history of childhood gender-nonconforming behaviors (Docter, 1988; Landén, Wälinder, & Lundström, 1998). Therefore, it may come as a surprise to others (parents, other family members, friends, and community members) when a youth's gender dysphoria first becomes evident in adolescence.

Adolescents who experience their primary and/or secondary sex characteristics and their sex assigned at birth as inconsistent with their gender identity may be intensely distressed about it. Many, but not all, gender dysphoric adolescents have a strong wish for hormones and surgery. Increasing numbers of adolescents have already started living in their desired gender role upon entering high school (Cohen-Kettenis & Pfäfflin, 2003).

Among adolescents who are referred to gender identity clinics, the number considered eligible for early medical treatment—starting with GnRH analogues to suppress puberty in the first Tanner stages—differs among countries and centers. Not all clinics offer puberty suppression. If such treatment is offered, the pubertal stage at which adolescents are allowed to start varies from Tanner stage 2 to stage 4 (Delemarre-van de Waal & Cohen-Kettenis, 2006; Zucker et al., 2012). The percentages of treated adolescents are likely influenced by the organization of health care, insurance aspects, cultural differences, opinions of health professionals, and diagnostic procedures offered in different settings.

Inexperienced clinicians may mistake indications of gender dysphoria for delusions. Phenomenologically, there is a qualitative difference between the presentation of gender dysphoria and the presentation of delusions or other psychotic symptoms. The vast majority of children and adolescents with gender dysphoria are not suffering from underlying severe psychiatric illness such as psychotic disorders (Steensma, Biemond, de Boer, & Cohen-Kettenis, published online ahead of print January 7, 2011).

It is more common for adolescents with gender dysphoria to have coexisting internalizing disorders such as anxiety and depression, and/or externalizing disorders such as oppositional defiant disorder (de Vries et al., 2010). As in children, there seems to be a higher prevalence of autistic spectrum disorders in clinically referred, gender dysphoric adolescents than in the general adolescent population (de Vries et al., 2010).

Competency of Mental Health Professionals Working with Children or Adolescents with Gender Dysphoria

The following are recommended minimum credentials for mental health professionals who assess, refer, and offer therapy to children and adolescents presenting with gender dysphoria:

1. Meet the competency requirements for mental health professionals working with adults, as outlined in section VII;
2. Trained in childhood and adolescent developmental psychopathology;
3. Competent in diagnosing and treating the ordinary problems of children and adolescents.

Roles of Mental Health Professionals Working with Children and Adolescents with Gender Dysphoria

The roles of mental health professionals working with gender dysphoric children and adolescents may include the following:

1. Directly assess gender dysphoria in children and adolescents (see general guidelines for assessment, below).
2. Provide family counseling and supportive psychotherapy to assist children and adolescents with exploring their gender identity, alleviating distress related to their gender dysphoria, and ameliorating any other psychosocial difficulties.
3. Assess and treat any coexisting mental health concerns of children or adolescents (or refer to another mental health professional for treatment). Such concerns should be addressed as part of the overall treatment plan.
4. Refer adolescents for additional physical interventions (such as puberty-suppressing hormones) to alleviate gender dysphoria. The referral should include documentation of an assessment of gender dysphoria and mental health, the adolescent's eligibility for physical interventions (outlined below), the mental health professional's relevant expertise, and any other information pertinent to the youth's health and referral for specific treatments.
5. Educate and advocate on behalf of gender dysphoric children, adolescents, and their families in their community (e.g., day care centers, schools, camps, other organizations). This is particularly important in light of evidence that children and adolescents who do not conform to socially prescribed gender norms may experience harassment in school (Grossman, D'Augelli, & Salter, 2006; Grossman, D'Augelli, Howell, & Hubbard, 2006; Sausa, 2005), putting them at risk for social isolation, depression, and other negative sequelae (Nuttbrock et al., 2010).
6. Provide children, youth, and their families with information and referral for peer support, such as support groups for parents of gender-nonconforming and transgender children (Gold & MacNish, 2011; Pleak, 1999; Rosenberg, 2002).

Assessment and psychosocial interventions for children and adolescents are often provided within a multidisciplinary gender identity specialty service. If such a multidisciplinary service is not available, a mental health professional should provide consultation and liaison arrangements with a pediatric endocrinologist for the purpose of assessment, education, and involvement in any decisions about physical interventions.

Psychological Assessment of Children and Adolescents

When assessing children and adolescents who present with gender dysphoria, mental health professionals should broadly conform to the following guidelines:

1. Mental health professionals should not dismiss or express a negative attitude towards nonconforming gender identities or indications of gender dysphoria. Rather, they should acknowledge the presenting concerns of children, adolescents, and their families; offer a thorough assessment for gender dysphoria and any coexisting mental health concerns; and educate clients and their families about therapeutic options, if needed. Acceptance, and alleviation of secrecy, can bring considerable relief to gender dysphoric children/adolescents and their families.
2. Assessment of gender dysphoria and mental health should explore the nature and characteristics of a child's or adolescent's gender identity. A psychodiagnostic and psychiatric assessment—covering the areas of emotional functioning, peer and other social relationships, and intellectual functioning/school achievement—should be performed. Assessment should include an evaluation of the strengths and weaknesses of family functioning. Emotional and behavioral problems are relatively common, and unresolved issues in a child's or youth's environment may be present (de Vries, Doreleijers, Steensma, & Cohen-Kettenis, 2011; Di Ceglie & Thümmel, 2006; Wallien et al., 2007).
3. For adolescents, the assessment phase should also be used to inform youth and their families about the possibilities and limitations of different treatments. This is necessary for informed consent, but also important for assessment. The way that adolescents respond to information about the reality of sex reassignment can be diagnostically informative. Correct information may alter a youth's desire for certain treatment, if the desire was based on unrealistic expectations of its possibilities.

Psychological and Social Interventions for Children and Adolescents

When supporting and treating children and adolescents with gender dysphoria, health professionals should broadly conform to the following guidelines:

1. Mental health professionals should help families to have an accepting and nurturing response to the concerns of their gender dysphoric child or adolescent. Families play an important role in the psychological health and well-being of youth (Brill & Pepper, 2008; Lev, 2004). This also applies to peers and mentors from the community, who can be another source of social support.

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2. Psychotherapy should focus on reducing a child's or adolescent's distress related to the gender dysphoria and on ameliorating any other psychosocial difficulties. For youth pursuing sex reassignment, psychotherapy may focus on supporting them before, during, and after reassignment. Formal evaluations of different psychotherapeutic approaches for this situation have not been published, but several counseling methods have been described (Cohen-Kettenis, 2006; de Vries, Cohen-Kettenis, & Delemarre-van de Waal, 2006; Di Ceglie & Thümmel, 2006; Hill, Menvielle, Sica, & Johnson, 2010; Malpas, in press; Menvielle & Tuerk, 2002; Rosenberg, 2002; Vanderburgh, 2009; Zucker, 2006).

Treatment aimed at trying to change a person's gender identity and expression to become more congruent with sex assigned at birth has been attempted in the past without success (Gelder & Marks, 1969; Greenson, 1964), particularly in the long term (Cohen-Kettenis & Kuiper, 1984; Pauly, 1965). Such treatment is no longer considered ethical.

3. Families should be supported in managing uncertainty and anxiety about their child's or adolescent's psychosexual outcomes and in helping youth to develop a positive self-concept.
4. Mental health professionals should not impose a binary view of gender. They should give ample room for clients to explore different options for gender expression. Hormonal or surgical interventions are appropriate for some adolescents, but not for others.
5. Clients and their families should be supported in making difficult decisions regarding the extent to which clients are allowed to express a gender role that is consistent with their gender identity, as well as the timing of changes in gender role and possible social transition. For example, a client might attend school while undergoing social transition only partly (e.g., by wearing clothing and having a hairstyle that reflects gender identity) or completely (e.g., by also using a name and pronouns congruent with gender identity). Difficult issues include whether and when to inform other people of the client's situation, and how others in their lives might respond.
6. Health professionals should support clients and their families as educators and advocates in their interactions with community members and authorities such as teachers, school boards, and courts.
7. Mental health professionals should strive to maintain a therapeutic relationship with gender-nonconforming children/adolescents and their families throughout any subsequent social changes or physical interventions. This ensures that decisions about gender expression and the treatment of gender dysphoria are thoughtfully and recurrently considered. The same reasoning applies if a child or adolescent has already socially changed gender role prior to being seen by a mental health professional.

Social Transition in Early Childhood

Some children state that they want to make a social transition to a different gender role long before puberty. For some children, this may reflect an expression of their gender identity. For others, this could be motivated by other forces. Families vary in the extent to which they allow their young children to make a social transition to another gender role. Social transitions in early childhood do occur within some families with early success. This is a controversial issue, and divergent views are held by health professionals. The current evidence base is insufficient to predict the long-term outcomes of completing a gender role transition during early childhood. Outcomes research with children who completed early social transitions would greatly inform future clinical recommendations.

Mental health professionals can help families to make decisions regarding the timing and process of any gender role changes for their young children. They should provide information and help parents to weigh the potential benefits and challenges of particular choices. Relevant in this respect are the previously described relatively low persistence rates of childhood gender dysphoria (Drummond et al., 2008; Wallien & Cohen-Kettenis, 2008). A change back to the original gender role can be highly distressing and even result in postponement of this second social transition on the child's part (Steensma & Cohen-Kettenis, 2011). For reasons such as these, parents may want to present this role change as an exploration of living in another gender role rather than an irreversible situation. Mental health professionals can assist parents in identifying potential in-between solutions or compromises (e.g., only when on vacation). It is also important that parents explicitly let the child know that there is a way back.

Regardless of a family's decisions regarding transition (timing, extent), professionals should counsel and support them as they work through the options and implications. If parents do not allow their young child to make a gender-role transition, they may need counseling to assist them with meeting their child's needs in a sensitive and nurturing way, ensuring that the child has ample possibilities to explore gender feelings and behavior in a safe environment. If parents do allow their young child to make a gender role transition, they may need counseling to facilitate a positive experience for their child. For example, they may need support in using correct pronouns, maintaining a safe and supportive environment for their transitioning child (e.g., in school, peer group settings), and communicating with other people in their child's life. In either case, as a child nears puberty, further assessment may be needed as options for physical interventions become relevant.

Physical Interventions for Adolescents

Before any physical interventions are considered for adolescents, extensive exploration of psychological, family, and social issues should be undertaken, as outlined above. The duration of this exploration may vary considerably depending on the complexity of the situation.

Physical interventions should be addressed in the context of adolescent development. Some identity beliefs in adolescents may become firmly held and strongly expressed, giving a false impression of irreversibility. An adolescent's shift towards gender conformity can occur primarily to please the parents and may not persist or reflect a permanent change in gender dysphoria (Hembree et al., 2009; Steensma et al., published online ahead of print January 7, 2011).

Physical interventions for adolescents fall into three categories or stages (Hembree et al., 2009):

1. *Fully reversible interventions.* These involve the use of GnRH analogues to suppress estrogen or testosterone production and consequently delay the physical changes of puberty. Alternative treatment options include progestins (most commonly medroxyprogesterone) or other medications (such as spironolactone) that decrease the effects of androgens secreted by the testicles of adolescents who are not receiving GnRH analogues. Continuous oral contraceptives (or depot medroxyprogesterone) may be used to suppress menses.
2. *Partially reversible interventions.* These include hormone therapy to masculinize or feminize the body. Some hormone-induced changes may need reconstructive surgery to reverse the effect (e.g., gynaecomastia caused by estrogens), while other changes are not reversible (e.g., deepening of the voice caused by testosterone).
3. *Irreversible interventions.* These are surgical procedures.

A staged process is recommended to keep options open through the first two stages. Moving from one stage to another should not occur until there has been adequate time for adolescents and their parents to assimilate fully the effects of earlier interventions.

Fully Reversible Interventions

Adolescents may be eligible for puberty-suppressing hormones as soon as pubertal changes have begun. In order for adolescents and their parents to make an informed decision about pubertal delay, it is recommended that adolescents experience the onset of puberty to at least Tanner Stage 2. Some children may arrive at this stage at very young ages (e.g., 9 years of age). Studies

evaluating this approach have only included children who were at least 12 years of age (Cohen-Kettenis, Schagen, Steensma, de Vries, & Delemarre-van de Waal, 2011; de Vries, Steensma et al., 2010; Delemarre-van de Waal, van Weissenbruch, & Cohen Kettenis, 2004; Delemarre-van de Waal & Cohen-Kettenis, 2006).

Two goals justify intervention with puberty-suppressing hormones: (i) their use gives adolescents more time to explore their gender nonconformity and other developmental issues; and (ii) their use may facilitate transition by preventing the development of sex characteristics that are difficult or impossible to reverse if adolescents continue on to pursue sex reassignment.

Puberty suppression may continue for a few years, at which time a decision is made to either discontinue all hormone therapy or transition to a feminizing/masculinizing hormone regimen. Pubertal suppression does not inevitably lead to social transition or to sex reassignment.

Criteria for Puberty-Suppressing Hormones

In order for adolescents to receive puberty-suppressing hormones, the following minimum criteria must be met:

1. The adolescent has demonstrated a long-lasting and intense pattern of gender nonconformity or gender dysphoria (whether suppressed or expressed);
2. Gender dysphoria emerged or worsened with the onset of puberty;
3. Any coexisting psychological, medical, or social problems that could interfere with treatment (e.g., that may compromise treatment adherence) have been addressed, such that the adolescent's situation and functioning are stable enough to start treatment;
4. The adolescent has given informed consent and, particularly when the adolescent has not reached the age of medical consent, the parents or other caretakers or guardians have consented to the treatment and are involved in supporting the adolescent throughout the treatment process.

Regimens, Monitoring, and Risks for Puberty Suppression

For puberty suppression, adolescents with male genitalia should be treated with GnRH analogues, which stop luteinizing hormone secretion and therefore testosterone secretion. Alternatively, they may be treated with progestins (such as medroxyprogesterone) or with other medications that block testosterone secretion and/or neutralize testosterone action. Adolescents with female genitalia should be treated with GnRH analogues, which stop the production of estrogens and

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progesterone. Alternatively, they may be treated with progestins (such as medroxyprogesterone). Continuous oral contraceptives (or depot medroxyprogesterone) may be used to suppress menses. In both groups of adolescents, use of GnRH analogues is the preferred treatment (Hembree et al., 2009), but their high cost is prohibitive for some patients.

During pubertal suppression, an adolescent's physical development should be carefully monitored—preferably by a pediatric endocrinologist—so that any necessary interventions can occur (e.g., to establish an adequate gender appropriate height, to improve iatrogenic low bone mineral density) (Hembree et al., 2009).

Early use of puberty-suppressing hormones may avert negative social and emotional consequences of gender dysphoria more effectively than their later use would. Intervention in early adolescence should be managed with pediatric endocrinological advice, when available. Adolescents with male genitalia who start GnRH analogues early in puberty should be informed that this could result in insufficient penile tissue for penile inversion vaginoplasty techniques (alternative techniques, such as the use of a skin graft or colon tissue, are available).

Neither puberty suppression nor allowing puberty to occur is a neutral act. On the one hand, functioning in later life can be compromised by the development of irreversible secondary sex characteristics during puberty and by years spent experiencing intense gender dysphoria. On the other hand, there are concerns about negative physical side effects of GnRH analogue use (e.g., on bone development and height). Although the very first results of this approach (as assessed for adolescents followed over 10 years) are promising (Cohen-Kettenis et al., 2011; Delemarre-van de Waal & Cohen-Kettenis, 2006), the long-term effects can only be determined when the earliest-treated patients reach the appropriate age.

Partially Reversible Interventions

Adolescents may be eligible to begin feminizing/masculinizing hormone therapy, preferably with parental consent. In many countries, 16-year-olds are legal adults for medical decision-making and do not require parental consent. Ideally, treatment decisions should be made among the adolescent, the family, and the treatment team.

Regimens for hormone therapy in gender dysphoric adolescents differ substantially from those used in adults (Hembree et al., 2009). The hormone regimens for youth are adapted to account for the somatic, emotional, and mental development that occurs throughout adolescence (Hembree et al., 2009).

Irreversible Interventions

Genital surgery should not be carried out until (i) patients reach the legal age of majority to give consent for medical procedures in a given country, and (ii) patients have lived continuously for at least 12 months in the gender role that is congruent with their gender identity. The age threshold should be seen as a minimum criterion and not an indication in and of itself for active intervention.

Chest surgery in FtM patients could be carried out earlier, preferably after ample time of living in the desired gender role and after one year of testosterone treatment. The intent of this suggested sequence is to give adolescents sufficient opportunity to experience and socially adjust in a more masculine gender role, before undergoing irreversible surgery. However, different approaches may be more suitable, depending on an adolescent's specific clinical situation and goals for gender identity expression.

Risks of Withholding Medical Treatment for Adolescents

Refusing timely medical interventions for adolescents might prolong gender dysphoria and contribute to an appearance that could provoke abuse and stigmatization. As the level of gender-related abuse is strongly associated with the degree of psychiatric distress during adolescence (Nuttbrock et al., 2010), withholding puberty suppression and subsequent feminizing or masculinizing hormone therapy is not a neutral option for adolescents.



Mental Health

Transsexual, transgender, and gender-nonconforming people might seek the assistance of a mental health professional for any number of reasons. Regardless of a person's reason for seeking care, mental health professionals should have familiarity with gender nonconformity, act with appropriate cultural competence, and exhibit sensitivity in providing care.

This section of the *SOC* focuses on the role of mental health professionals in the care of adults seeking help for gender dysphoria and related concerns. Professionals working with gender dysphoric children, adolescents, and their families should consult section VI.

Competency of Mental Health Professionals Working with Adults Who Present with Gender Dysphoria

The training of mental health professionals competent to work with gender dysphoric adults rests upon basic general clinical competence in the assessment, diagnosis, and treatment of mental health concerns. Clinical training may occur within any discipline that prepares mental health professionals for clinical practice, such as psychology, psychiatry, social work, mental health counseling, marriage and family therapy, nursing, or family medicine with specific training in behavioral health and counseling. The following are recommended minimum credentials for mental health professionals who work with adults presenting with gender dysphoria:

1. A master's degree or its equivalent in a clinical behavioral science field. This degree, or a more advanced one, should be granted by an institution accredited by the appropriate national or regional accrediting board. The mental health professional should have documented credentials from a relevant licensing board or equivalent for that country.
2. Competence in using the *Diagnostic Statistical Manual of Mental Disorders* and/or the *International Classification of Diseases* for diagnostic purposes.
3. Ability to recognize and diagnose coexisting mental health concerns and to distinguish these from gender dysphoria.
4. Documented supervised training and competence in psychotherapy or counseling.
5. Knowledgeable about gender-nonconforming identities and expressions, and the assessment and treatment of gender dysphoria.
6. Continuing education in the assessment and treatment of gender dysphoria. This may include attending relevant professional meetings, workshops, or seminars; obtaining supervision from a mental health professional with relevant experience; or participating in research related to gender nonconformity and gender dysphoria.

In addition to the minimum credentials above, it is recommended that mental health professionals develop and maintain cultural competence to facilitate their work with transsexual, transgender, and gender-nonconforming clients. This may involve, for example, becoming knowledgeable about current community, advocacy, and public policy issues relevant to these clients and their families. Additionally, knowledge about sexuality, sexual health concerns, and the assessment and treatment of sexual disorders is preferred.

Mental health professionals who are new to the field (irrespective of their level of training and other experience) should work under the supervision of a mental health professional with established competence in the assessment and treatment of gender dysphoria.

Tasks of Mental Health Professionals Working with Adults Who Present with Gender Dysphoria

Mental health professionals may serve transsexual, transgender, and gender-nonconforming individuals and their families in many ways, depending on a client's needs. For example, mental health professionals may serve as a psychotherapist, counselor, or family therapist, or as a diagnostician/assessor, advocate, or educator.

Mental health professionals should determine a client's reasons for seeking professional assistance. For example, a client may be presenting for any combination of the following health care services: psychotherapeutic assistance to explore gender identity and expression or to facilitate a coming-out process; assessment and referral for feminizing/masculinizing medical interventions; psychological support for family members (partners, children, extended family); psychotherapy unrelated to gender concerns; or other professional services.

Below are general guidelines for common tasks that mental health professionals may fulfill in working with adults who present with gender dysphoria.

Tasks Related to Assessment and Referral

1. Assess Gender Dysphoria

Mental health professionals assess clients' gender dysphoria in the context of an evaluation of their psychosocial adjustment (Bockting et al., 2006; Lev, 2004, 2009). The evaluation includes, at a minimum, assessment of gender identity and gender dysphoria, history and development of gender dysphoric feelings, the impact of stigma attached to gender nonconformity on mental health, and the availability of support from family, friends, and peers (for example, in-person or online contact with other transsexual, transgender, or gender-nonconforming individuals or groups). The evaluation may result in no diagnosis, in a formal diagnosis related to gender dysphoria, and/or in other diagnoses that describe aspects of the client's health and psychosocial adjustment. The role

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of mental health professionals includes making reasonably sure that the gender dysphoria is not secondary to, or better accounted for, by other diagnoses.

Mental health professionals with the competencies described above (hereafter called “a qualified mental health professional”) are best prepared to conduct this assessment of gender dysphoria. However, this task may instead be conducted by another type of health professional who has appropriate training in behavioral health and is competent in the assessment of gender dysphoria, particularly when functioning as part of a multidisciplinary specialty team that provides access to feminizing/masculinizing hormone therapy. This professional may be the prescribing hormone therapy provider or a member of that provider’s health care team.

2. Provide Information Regarding Options for Gender Identity and Expression and Possible Medical Interventions

An important task of mental health professionals is to educate clients regarding the diversity of gender identities and expressions and the various options available to alleviate gender dysphoria. Mental health professionals then may facilitate a process (or refer elsewhere) in which clients explore these various options, with the goals of finding a comfortable gender role and expression and becoming prepared to make a fully informed decision about available medical interventions, if needed. This process may include referral for individual, family, and group therapy and/or to community resources and avenues for peer support. The professional and the client discuss the implications, both short- and long-term, of any changes in gender role and use of medical interventions. These implications can be psychological, social, physical, sexual, occupational, financial, and legal (Bockting et al., 2006; Lev, 2004).

This task is also best conducted by a qualified mental health professional, but may be conducted by another health professional with appropriate training in behavioral health and with sufficient knowledge about gender-nonconforming identities and expressions and about possible medical interventions for gender dysphoria, particularly when functioning as part of a multidisciplinary specialty team that provides access to feminizing/masculinizing hormone therapy.

3. Assess, Diagnose, and Discuss Treatment Options for Coexisting Mental Health Concerns

Clients presenting with gender dysphoria may struggle with a range of mental health concerns (Gómez-Gil, Trilla, Salamero, Godás, & Valdés, 2009; Murad et al., 2010) whether related or unrelated to what is often a long history of gender dysphoria and/or chronic minority stress. Possible concerns include anxiety, depression, self-harm, a history of abuse and neglect, compulsivity, substance abuse, sexual concerns, personality disorders, eating disorders, psychotic disorders, and autistic spectrum disorders (Bockting et al., 2006; Nuttbrock et al., 2010; Robinow, 2009). Mental health professionals should screen for these and other mental health concerns and incorporate

the identified concerns into the overall treatment plan. These concerns can be significant sources of distress and, if left untreated, can complicate the process of gender identity exploration and resolution of gender dysphoria (Bockting et al., 2006; Fraser, 2009a; Lev, 2009). Addressing these concerns can greatly facilitate the resolution of gender dysphoria, possible changes in gender role, the making of informed decisions about medical interventions, and improvements in quality of life.

Some clients may benefit from psychotropic medications to alleviate symptoms or treat coexisting mental health concerns. Mental health professionals are expected to recognize this and either provide pharmacotherapy or refer to a colleague who is qualified to do so. The presence of coexisting mental health concerns does not necessarily preclude possible changes in gender role or access to feminizing/masculinizing hormones or surgery; rather, these concerns need to be optimally managed prior to, or concurrent with, treatment of gender dysphoria. In addition, clients should be assessed for their ability to provide educated and informed consent for medical treatments.

Qualified mental health professionals are specifically trained to assess, diagnose, and treat (or refer to treatment for) these coexisting mental health concerns. Other health professionals with appropriate training in behavioral health, particularly when functioning as part of a multidisciplinary specialty team providing access to feminizing/masculinizing hormone therapy, may also screen for mental health concerns and, if indicated, provide referral for comprehensive assessment and treatment by a qualified mental health professional.

4. If Applicable, Assess Eligibility, Prepare, and Refer for Hormone Therapy

The SOC provide criteria to guide decisions regarding feminizing/masculinizing hormone therapy (outlined in section VIII and Appendix C). Mental health professionals can help clients who are considering hormone therapy to be both psychologically prepared (e.g., client has made a fully informed decision with clear and realistic expectations; is ready to receive the service in line with the overall treatment plan; has included family and community as appropriate) and practically prepared (e.g., has been evaluated by a physician to rule out or address medical contraindications to hormone use; has considered the psychosocial implications). If clients are of childbearing age, reproductive options (section IX) should be explored before initiating hormone therapy.

It is important for mental health professionals to recognize that decisions about hormones are first and foremost a client's decisions—as are all decisions regarding healthcare. However, mental health professionals have a responsibility to encourage, guide, and assist clients with making fully informed decisions and becoming adequately prepared. To best support their clients' decisions, mental health professionals need to have functioning working relationships with their clients and sufficient information about them. Clients should receive prompt and attentive evaluation, with the goal of alleviating their gender dysphoria and providing them with appropriate medical services.

Referral for feminizing/masculinizing hormone therapy

People may approach a specialized provider in any discipline to pursue feminizing/masculinizing hormone therapy. However, transgender health care is an interdisciplinary field, and coordination of care and referral among a client's overall care team is recommended.

Hormone therapy can be initiated with a referral from a qualified mental health professional. Alternatively, a health professional who is appropriately trained in behavioral health and competent in the assessment of gender dysphoria may assess eligibility, prepare, and refer the patient for hormone therapy, particularly in the absence of significant coexisting mental health concerns and when working in the context of a multidisciplinary specialty team. The referring health professional should provide documentation—in the chart and/or referral letter—of the patient's personal and treatment history, progress, and eligibility. Health professionals who recommend hormone therapy share the ethical and legal responsibility for that decision with the physician who provides the service.

The recommended content of the referral letter for feminizing/masculinizing hormone therapy is as follows:

1. The client's general identifying characteristics;
2. Results of the client's psychosocial assessment, including any diagnoses;
3. The duration of the referring health professional's relationship with the client, including the type of evaluation and therapy or counseling to date;
4. An explanation that the criteria for hormone therapy have been met, and a brief description of the clinical rationale for supporting the client's request for hormone therapy;
5. A statement that informed consent has been obtained from the patient;
6. A statement that the referring health professional is available for coordination of care and welcomes a phone call to establish this.

For providers working within a multidisciplinary specialty team, a letter may not be necessary; rather, the assessment and recommendation can be documented in the patient's chart.

5. If Applicable, Assess Eligibility, Prepare, and Refer for Surgery

The SOC also provide criteria to guide decisions regarding breast/chest surgery and genital surgery (outlined in section XI and Appendix C). Mental health professionals can help clients who are

considering surgery to be both psychologically prepared (e.g., has made a fully informed decision with clear and realistic expectations; is ready to receive the service in line with the overall treatment plan; has included family and community as appropriate) and practically prepared (e.g., has made an informed choice about a surgeon to perform the procedure; has arranged aftercare). If clients are of childbearing age, reproductive options (section IX) should be explored before undergoing genital surgery.

The SOC do not state criteria for other surgical procedures, such as feminizing or masculinizing facial surgery; however, mental health professionals can play an important role in helping their clients to make fully informed decisions about the timing and implications of such procedures in the context of the overall coming-out or transition process.

It is important for mental health professionals to recognize that decisions about surgery are first and foremost a client's decisions—as are all decisions regarding healthcare. However, mental health professionals have a responsibility to encourage, guide, and assist clients with making fully informed decisions and becoming adequately prepared. To best support their clients' decisions, mental health professionals need to have functioning working relationships with their clients and sufficient information about them. Clients should receive prompt and attentive evaluation, with the goal of alleviating their gender dysphoria and providing them with appropriate medical services.

Referral for surgery

Surgical treatments for gender dysphoria can be initiated by a referral (one or two, depending on the type of surgery) from a qualified mental health professional. The mental health professional provides documentation—in the chart and/or referral letter—of the patient's personal and treatment history, progress, and eligibility. Mental health professionals who recommend surgery share the ethical and legal responsibility for that decision with the surgeon.

- One referral from a qualified mental health professional is needed for breast/chest surgery (e.g., mastectomy, chest reconstruction, or augmentation mammoplasty).
- Two referrals—from qualified mental health professionals who have independently assessed the patient—are needed for genital surgery (i.e., hysterectomy/salpingo-oophorectomy, orchiectomy, genital reconstructive surgeries). If the first referral is from the patient's psychotherapist, the second referral should be from a person who has only had an evaluative role with the patient. Two separate letters, or one letter signed by both (e.g., if practicing within the same clinic) may be sent. Each referral letter, however, is expected to cover the same topics in the areas outlined below.

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The recommended content of the referral letters for surgery is as follows:

1. The client's general identifying characteristics;
2. Results of the client's psychosocial assessment, including any diagnoses;
3. The duration of the mental health professional's relationship with the client, including the type of evaluation and therapy or counseling to date;
4. An explanation that the criteria for surgery have been met, and a brief description of the clinical rationale for supporting the patient's request for surgery;
5. A statement about the fact that informed consent has been obtained from the patient;
6. A statement that the mental health professional is available for coordination of care and welcomes a phone call to establish this.

For providers working within a multidisciplinary specialty team, a letter may not be necessary, rather, the assessment and recommendation can be documented in the patient's chart.

Relationship of Mental Health Professionals with Hormone-Prescribing Physicians, Surgeons, and Other Health Professionals

It is ideal for mental health professionals to perform their work and periodically discuss progress and obtain peer consultation from other professionals (both in mental health care and other health disciplines) who are competent in the assessment and treatment of gender dysphoria. The relationship among professionals involved in a client's health care should remain collaborative, with coordination and clinical dialogue taking place as needed. Open and consistent communication may be necessary for consultation, referral, and management of postoperative concerns.

Tasks Related to Psychotherapy

1. Psychotherapy Is Not an Absolute Requirement for Hormone Therapy and Surgery

A mental health screening and/or assessment as outlined above is needed for referral to hormonal and surgical treatments for gender dysphoria. In contrast, psychotherapy—although highly recommended—is not a requirement.

The SOC do not recommend a minimum number of psychotherapy sessions prior to hormone therapy or surgery. The reasons for this are multifaceted (Lev, 2009). First, a minimum number of sessions tends to be construed as a hurdle, which discourages the genuine opportunity for personal growth. Second, mental health professionals can offer important support to clients throughout all phases of exploration of gender identity, gender expression, and possible transition—not just prior to any possible medical interventions. Third, clients and their psychotherapists differ in their abilities to attain similar goals in a specified time period.

2. Goals of Psychotherapy for Adults with Gender Concerns

The general goal of psychotherapy is to find ways to maximize a person's overall psychological well-being, quality of life, and self-fulfillment. Psychotherapy is not intended to alter a person's gender identity; rather, psychotherapy can help an individual to explore gender concerns and find ways to alleviate gender dysphoria, if present (Bockting et al., 2006; Bockting & Coleman, 2007; Fraser, 2009a; Lev, 2004). Typically, the overarching treatment goal is to help transsexual, transgender, and gender-nonconforming individuals achieve long-term comfort in their gender identity expression, with realistic chances for success in their relationships, education, and work. For additional details, see Fraser (Fraser, 2009c).

Therapy may consist of individual, couple, family, or group psychotherapy, the latter being particularly important to foster peer support.

3. Psychotherapy for Transsexual, Transgender, and Gender-Nonconforming Clients, Including Counseling and Support for Changes in Gender Role

Finding a comfortable gender role is, first and foremost, a psychosocial process. Psychotherapy can be invaluable in assisting transsexual, transgender, and gender-nonconforming individuals with all of the following: (i) clarifying and exploring gender identity and role, (ii) addressing the impact of stigma and minority stress on one's mental health and human development, and (iii) facilitating a coming-out process (Bockting & Coleman, 2007; Devor, 2004; Lev, 2004), which for some individuals may include changes in gender role expression and the use of feminizing/masculinizing medical interventions.

Mental health professionals can provide support and promote interpersonal skills and resilience in individuals and their families as they navigate a world that often is ill-prepared to accommodate and respect transgender, transsexual, and gender-nonconforming people. Psychotherapy can also aid in alleviating any coexisting mental health concerns (e.g., anxiety, depression) identified during screening and assessment.

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For transsexual, transgender, and gender-nonconforming individuals who plan to change gender roles permanently and make a social gender role transition, mental health professionals can facilitate the development of an individualized plan with specific goals and timelines. While the experience of changing one's gender role differs from person to person, the social aspects of the experience are usually challenging—often more so than the physical aspects. Because changing gender role can have profound personal and social consequences, the decision to do so should include an awareness of what the familial, interpersonal, educational, vocational, economic, and legal challenges are likely to be, so that people can function successfully in their gender role.

Many transsexual, transgender, and gender-nonconforming people will present for care without ever having been related to, or accepted in, the gender role that is most congruent with their gender identity. Mental health professionals can help these clients to explore and anticipate the implications of changes in gender role, and to pace the process of implementing these changes. Psychotherapy can provide a space for clients to begin to express themselves in ways that are congruent with their gender identity and, for some clients, overcome fears about changes in gender expression. Calculated risks can be taken outside of therapy to gain experience and build confidence in the new role. Assistance with coming out to family and community (friends, school, workplace) can be provided.

Other transsexual, transgender, and gender-nonconforming individuals will present for care already having acquired experience (minimal, moderate, or extensive) living in a gender role that differs from that associated with their birth-assigned sex. Mental health professionals can help these clients to identify and work through potential challenges and foster optimal adjustment as they continue to express changes in their gender role.

4. Family Therapy or Support for Family Members

Decisions about changes in gender role and medical interventions for gender dysphoria have implications for, not only clients, but also their families (Emerson & Rosenfeld, 1996; Fraser, 2009a; Lev, 2004). Mental health professionals can assist clients with making thoughtful decisions about communicating with family members and others about their gender identity and treatment decisions. Family therapy may include work with spouses or partners, as well as with children and other members of a client's extended family.

Clients may also request assistance with their relationships and sexual health. For example, they may want to explore their sexuality and intimacy-related concerns.

Family therapy might be offered as part of the client's individual therapy and, if clinically appropriate, by the same provider. Alternatively, referrals can be made to other therapists with relevant expertise

for working with family members or to sources of peer support (e.g., in-person or offline support networks of partners or families).

5. Follow-Up Care Throughout Life

Mental health professionals may work with clients and their families at many stages of their lives. Psychotherapy may be helpful at different times and for various issues throughout the life cycle.

6. E-Therapy, Online Counseling, or Distance Counseling

Online or e-therapy has been shown to be particularly useful for people who have difficulty accessing competent in-person psychotherapeutic treatment and who may experience isolation and stigma (Derrig-Palumbo & Zeine, 2005; Fenichel et al., 2004; Fraser, 2009b). By extrapolation, e-therapy may be a useful modality for psychotherapy with transsexual, transgender, and gender-nonconforming people. E-therapy offers opportunities for potentially enhanced, expanded, creative, and tailored delivery of services; however, as a developing modality it may also carry unexpected risk. Telemedicine guidelines are clear in some disciplines in some parts of the United States (Fraser, 2009b; Maheu, Pulier, Wilhelm, McMenemy, & Brown-Connolly, 2005) but not all; the international situation is even less well-defined (Maheu et al., 2005). Until sufficient evidence-based data on this use of e-therapy is available, caution in its use is advised.

Mental health professionals engaging in e-therapy are advised to stay current with their particular licensing board, professional association, and country's regulations, as well as the most recent literature pertaining to this rapidly evolving medium. A more thorough description of the potential uses, processes, and ethical concerns related to e-therapy has been published (Fraser, 2009b).

Other Tasks of Mental Health Professionals

1. Educate and Advocate on Behalf of Clients Within Their Community (Schools, Workplaces, Other Organizations) and Assist Clients with Making Changes in Identity Documents

Transsexual, transgender, and gender-nonconforming people may face challenges in their professional, educational, and other types of settings as they actualize their gender identity and expression (Lev, 2004, 2009). Mental health professionals can play an important role by educating people in these settings regarding gender nonconformity and by advocating on behalf of their clients (Currah, Juang, & Minter, 2006; Currah & Minter, 2000). This role may involve consultation

with school counselors, teachers, and administrators, human resources staff, personnel managers and employers, and representatives from other organizations and institutions. In addition, health providers may be called upon to support changes in a client's name and/or gender marker on identity documents such as passports, driver's licenses, birth certificates, and diplomas.

2. Provide Information and Referral for Peer Support

For some transsexual, transgender, and gender-nonconforming people, an experience in peer support groups may be more instructive regarding options for gender expression than anything individual psychotherapy could offer (Rachlin, 2002). Both experiences are potentially valuable, and all people exploring gender issues should be encouraged to participate in community activities, if possible. Resources for peer support and information should be made available.

Culture and Its Ramifications for Assessment and Psychotherapy

Health professionals work in enormously different environments across the world. Forms of distress that cause people to seek professional assistance in any culture are understood and classified by people in terms that are products of their own cultures (Frank & Frank, 1993). Cultural settings also largely determine how such conditions are understood by mental health professionals. Cultural differences related to gender identity and expression can affect patients, mental health professionals, and accepted psychotherapy practice. WPATH recognizes that the SOC have grown out of a Western tradition and may need to be adapted depending on the cultural context.

Ethical Guidelines Related to Mental Health Care

Mental health professionals need to be certified or licensed to practice in a given country according to that country's professional regulations (Fraser, 2009b; Pope & Vasquez, 2011). Professionals must adhere to the ethical codes of their professional licensing or certifying organizations in all of their work with transsexual, transgender, and gender-nonconforming clients.

Treatment aimed at trying to change a person's gender identity and lived gender expression to become more congruent with sex assigned at birth has been attempted in the past (Gelder & Marks, 1969; Greenson, 1964), yet without success, particularly in the long-term (Cohen-Kettenis & Kuiper, 1984; Pauly, 1965). Such treatment is no longer considered ethical.

If mental health professionals are uncomfortable with, or inexperienced in, working with transsexual, transgender, and gender-nonconforming individuals and their families, they should refer clients to a competent provider or, at minimum, consult with an expert peer. If no local practitioners are available, consultation may be done via telehealth methods, assuming local requirements for distance consultation are met.

Issues of Access to Care

Qualified mental health professionals are not universally available; thus, access to quality care might be limited. WPATH aims to improve access and provides regular continuing education opportunities to train professionals from various disciplines to provide quality, transgender-specific health care. Providing mental health care from a distance through the use of technology may be one way to improve access (Fraser, 2009b).

In many places around the world, access to health care for transsexual, transgender, and gender-nonconforming people is also limited by a lack of health insurance or other means to pay for needed care. WPATH urges health insurance companies and other third-party payers to cover the medically necessary treatments to alleviate gender dysphoria (American Medical Association, 2008; Anton, 2009; The World Professional Association for Transgender Health, 2008).

When faced with a client who is unable to access services, referral to available peer support resources (offline and online) is recommended. Finally, harm-reduction approaches might be indicated to assist clients with making healthy decisions to improve their lives.



Hormone Therapy

Medical Necessity of Hormone Therapy

Feminizing/masculinizing hormone therapy—the administration of exogenous endocrine agents to induce feminizing or masculinizing changes—is a medically necessary intervention for many transsexual, transgender, and gender-nonconforming individuals with gender dysphoria

(Newfield, Hart, Dibble, & Kohler, 2006; Pfäfflin & Junge, 1998). Some people seek maximum feminization/masculinization, while others experience relief with an androgynous presentation resulting from hormonal minimization of existing secondary sex characteristics (Factor & Rothblum, 2008). Evidence for the psychosocial outcomes of hormone therapy is summarized in Appendix D.

Hormone therapy must be individualized based on a patient's goals, the risk/benefit ratio of medications, the presence of other medical conditions, and consideration of social and economic issues. Hormone therapy can provide significant comfort to patients who do not wish to make a social gender role transition or undergo surgery, or who are unable to do so (Meyer III, 2009). Hormone therapy is a recommended criterion for some, but not all, surgical treatments for gender dysphoria (see section XI and Appendix C).

Criteria for Hormone Therapy

Initiation of hormone therapy may be undertaken after a psychosocial assessment has been conducted and informed consent has been obtained by a qualified health professional, as outlined in section VII of the SOC. A referral is required from the mental health professional who performed the assessment, unless the assessment was done by a hormone provider who is also qualified in this area.

The criteria for hormone therapy are as follows:

1. Persistent, well-documented gender dysphoria;
2. Capacity to make a fully informed decision and to consent for treatment;
3. Age of majority in a given country (if younger, follow the SOC outlined in section VI);
4. If significant medical or mental health concerns are present, they must be reasonably well-controlled.

As noted in section VII of the SOC, the presence of coexisting mental health concerns does not necessarily preclude access to feminizing/masculinizing hormones; rather, these concerns need to be managed prior to, or concurrent with, treatment of gender dysphoria.

In selected circumstances, it can be acceptable practice to provide hormones to patients who have not fulfilled these criteria. Examples include facilitating the provision of monitored therapy using hormones of known quality as an alternative to illicit or unsupervised hormone use or to patients

who have already established themselves in their affirmed gender and who have a history of prior hormone use. It is unethical to deny availability or eligibility for hormone therapy solely on the basis of blood seropositivity for blood-borne infections such as HIV or hepatitis B or C.

In rare cases, hormone therapy may be contraindicated due to serious individual health conditions. Health professionals should assist these patients with accessing nonhormonal interventions for gender dysphoria. A qualified mental health professional familiar with the patient is an excellent resource in these circumstances.

Informed Consent

Feminizing/masculinizing hormone therapy may lead to irreversible physical changes. Thus, hormone therapy should be provided only to those who are legally able to provide informed consent. This includes people who have been declared by a court to be emancipated minors, incarcerated people, and cognitively impaired people who are considered competent to participate in their medical decisions (Bockting et al., 2006). Providers should document in the medical record that comprehensive information has been provided and understood about all relevant aspects of the hormone therapy, including both possible benefits and risks and the impact on reproductive capacity.

Relationship Between the *Standards of Care* and Informed Consent Model Protocols

A number of community health centers in the United States have developed protocols for providing hormone therapy based on an approach that has become known as the Informed Consent Model (Callen Lorde Community Health Center, 2000, 2011; Fenway Community Health Transgender Health Program, 2007; Tom Waddell Health Center, 2006). These protocols are consistent with the guidelines presented in the WPATH *Standards of Care, Version 7*. The SOC are flexible clinical guidelines; they allow for tailoring of interventions to the needs of the individual receiving services and for tailoring of protocols to the approach and setting in which these services are provided (Ehrbar & Gorton, 2010).

Obtaining informed consent for hormone therapy is an important task of providers to ensure that patients understand the psychological and physical benefits and risks of hormone therapy, as well as its psychosocial implications. Providers prescribing the hormones or health professionals recommending the hormones should have the knowledge and experience to assess gender

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dysphoria. They should inform individuals of the particular benefits, limitations, and risks of hormones, given the patient's age, previous experience with hormones, and concurrent physical or mental health concerns.

Screening for and addressing acute or current mental health concerns is an important part of the informed consent process. This may be done by a mental health professional or by an appropriately trained prescribing provider (see section VII of the SOC). The same provider or another appropriately trained member of the health care team (e.g., a nurse) can address the psychosocial implications of taking hormones when necessary (e.g., the impact of masculinization/feminization on how one is perceived and its potential impact on relationships with family, friends, and coworkers). If indicated, these providers will make referrals for psychotherapy and for the assessment and treatment of coexisting mental health concerns such as anxiety or depression.

The difference between the Informed Consent Model and *SOC, Version 7*, is that the *SOC* puts greater emphasis on the important role that mental health professionals can play in alleviating gender dysphoria and facilitating changes in gender role and psychosocial adjustment. This may include a comprehensive mental health assessment and psychotherapy, when indicated. In the Informed Consent Model, the focus is on obtaining informed consent as the threshold for the initiation of hormone therapy in a multidisciplinary, harm-reduction environment. Less emphasis is placed on the provision of mental health care until the patient requests it, unless significant mental health concerns are identified that would need to be addressed before hormone prescription.

Physical Effects of Hormone Therapy

Feminizing/masculinizing hormone therapy will induce physical changes that are more congruent with a patient's gender identity.

- In FtM patients, the following physical changes are expected to occur: deepened voice, clitoral enlargement (variable), growth in facial and body hair, cessation of menses, atrophy of breast tissue, and decreased percentage of body fat compared to muscle mass.
- In MtF patients, the following physical changes are expected to occur: breast growth (variable), decreased erectile function, decreased testicular size, and increased percentage of body fat compared to muscle mass.

Most physical changes, whether feminizing or masculinizing, occur over the course of two years. The amount of physical change and the exact timeline of effects can be highly variable. Tables 1a and 1b outline the approximate time course of these physical changes.

TABLE 1A: EFFECTS AND EXPECTED TIME COURSE OF MASCULINIZING HORMONES ^A

Effect	Expected onset ^B	Expected maximum effect ^C
Skin oiliness/acne	1–6 months	1–2 years
Facial/body hair growth	3–6 months	3–5 years
Scalp hair loss	>12 months ^C	Variable
Increased muscle mass/strength	6–12 months	2–5 years ^D
Body fat redistribution	3–6 months	2–5 years
Cessation of menses	2–6 months	n/a
Clitoral enlargement	3–6 months	1–2 years
Vaginal atrophy	3–6 months	1–2 years
Deepened voice	3–12 months	1–2 years

^A Adapted with permission from Hembree et al. (2009). Copyright 2009, The Endocrine Society.

^B Estimates represent published and unpublished clinical observations.

^C Highly dependent on age and inheritance; may be minimal.

^D Significantly dependent on amount of exercise.

TABLE 1B: EFFECTS AND EXPECTED TIME COURSE OF FEMINIZING HORMONES ^A

Effect	Expected onset ^B	Expected maximum effect ^B
Body fat redistribution	3–6 months	2–5 years
Decreased muscle mass/ strength	3–6 months	1–2 years ^C
Softening of skin/decreased oiliness	3–6 months	Unknown
Decreased libido	1–3 months	1–2 years
Decreased spontaneous erections	1–3 months	3–6 months
Male sexual dysfunction	Variable	Variable
Breast growth	3–6 months	2–3 years
Decreased testicular volume	3–6 months	2–3 years
Decreased sperm production	Variable	Variable
Thinning and slowed growth of body and facial hair	6–12 months	> 3 years ^D
Male pattern baldness	No regrowth, loss stops 1–3 months	1–2 years

^A Adapted with permission from Hembree et al. (2009). Copyright 2009, The Endocrine Society.

^B Estimates represent published and unpublished clinical observations.

^C Significantly dependent on amount of exercise.

^D Complete removal of male facial and body hair requires electrolysis, laser treatment, or both.

The degree and rate of physical effects depends in part on the dose, route of administration, and medications used, which are selected in accordance with a patient's specific medical goals (e.g., changes in gender role expression, plans for sex reassignment) and medical risk profile. There is no current evidence that response to hormone therapy—with the possible exception of voice deepening in FtM persons—can be reliably predicted based on age, body habitus, ethnicity, or family appearance. All other factors being equal, there is no evidence to suggest that any medically approved type or method of administering hormones is more effective than any other in producing the desired physical changes.

Risks of Hormone Therapy

All medical interventions carry risks. The likelihood of a serious adverse event is dependent on numerous factors: the medication itself, dose, route of administration, and a patient's clinical characteristics (age, comorbidities, family history, health habits). It is thus impossible to predict whether a given adverse effect will happen in an individual patient.

The risks associated with feminizing/masculinizing hormone therapy for the transsexual, transgender, and gender-nonconforming population as a whole are summarized in Table 2. Based on the level of evidence, risks are categorized as follows: (i) likely increased risk with hormone therapy, (ii) possibly increased risk with hormone therapy, or (iii) inconclusive or no increased risk. Items in the last category include those that may present risk, but for which the evidence is so minimal that no clear conclusion can be reached.

Additional detail about these risks can be found in Appendix B, which is based on two comprehensive, evidence-based literature reviews of masculinizing/feminizing hormone therapy (Feldman & Safer, 2009; Hembree et al., 2009), along with a large cohort study (Asscheman et al., 2011). These reviews can serve as detailed references for providers, along with other widely recognized, published clinical materials (Dahl, Feldman, Goldberg, & Jaber, 2006; Ettner, Monstrey, & Eyler, 2007).

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TABLE 2: RISKS ASSOCIATED WITH HORMONE THERAPY. BOLDDED ITEMS ARE CLINICALLY SIGNIFICANT

Risk Level	Feminizing hormones	Masculinizing hormones
Likely increased risk	Venous thromboembolic disease^a Gallstones Elevated liver enzymes Weight gain Hypertriglyceridemia	Polycythemia Weight gain Acne Androgenic alopecia (balding) Sleep apnea
Likely increased risk with presence of additional risk factors ^a	Cardiovascular disease	
Possible increased risk	Hypertension Hyperprolactinemia or prolactinoma	Elevated liver enzymes Hyperlipidemia
Possible increased risk with presence of additional risk factors ^b	Type 2 diabetes^a	Destabilization of certain psychiatric disorders ^c Cardiovascular disease Hypertension Type 2 diabetes
No increased risk or inconclusive	Breast cancer	Loss of bone density Breast cancer Cervical cancer Ovarian cancer Uterine cancer

^a Note: Risk is greater with oral estrogen administration than with transdermal estrogen administration.

^A Risk is greater with oral estrogen administration than with transdermal estrogen administration.

^B Additional risk factors include age.

^C Includes bipolar, schizoaffective, and other disorders that may include manic or psychotic symptoms. This adverse event appears to be associated with higher doses or supraphysiologic blood levels of testosterone.

Competency of Hormone-Prescribing Physicians, Relationship with Other Health Professionals

Feminizing/masculinizing hormone therapy is best undertaken in the context of a complete approach to health care that includes comprehensive primary care and a coordinated approach to psychosocial issues (Feldman & Safer, 2009). While psychotherapy or ongoing counseling is not required for the initiation of hormone therapy, if a therapist is involved, then regular communication among health professionals is advised (with the patient's consent) to ensure that the transition process is going well, both physically and psychosocially.

With appropriate training, feminizing/masculinizing hormone therapy can be managed by a variety of providers, including nurse practitioners, physician assistants, and primary care physicians (Dahl et al., 2006). Medical visits relating to hormone maintenance provide an opportunity to deliver broader care to a population that is often medically underserved (Clements, Wilkinson, Kitano, & Marx, 1999; Feldman, 2007; Xavier, 2000). Many of the screening tasks and management of comorbidities associated with long-term hormone use, such as cardiovascular risk factors and cancer screening, fall more uniformly within the scope of primary care rather than specialist care (American Academy of Family Physicians, 2005; Eyer, 2007; World Health Organization, 2008), particularly in locations where dedicated gender teams or specialized physicians are not available.

Given the multidisciplinary needs of transsexual, transgender, and gender-nonconforming people seeking hormone therapy, as well as the difficulties associated with fragmentation of care in general (World Health Organization, 2008), WPATH strongly encourages the increased training and involvement of primary care providers in the area of feminizing/masculinizing hormone therapy. If hormones are prescribed by a specialist, there should be close communication with the patient's primary care provider. Conversely, an experienced hormone provider or endocrinologist should be involved if the primary care physician has no experience with this type of hormone therapy, or if the patient has a pre-existing metabolic or endocrine disorder that could be affected by endocrine therapy.

While formal training programs in transgender medicine do not yet exist, hormone providers have a responsibility to obtain appropriate knowledge and experience in this field. Clinicians can increase their experience and comfort in providing feminizing/masculinizing hormone therapy by co-managing care or consulting with a more experienced provider, or by providing more limited types of hormone therapy before progressing to initiation of hormone therapy. Because this field of medicine is evolving, clinicians should become familiar and keep current with the medical literature, and discuss emerging issues with colleagues. Such discussions might occur through networks established by WPATH and other national/local organizations.

Responsibilities of Hormone-Prescribing Physicians

In general, clinicians who prescribe hormone therapy should engage in the following tasks:

1. Perform an initial evaluation that includes discussion of a patient's physical transition goals, health history, physical examination, risk assessment, and relevant laboratory tests.
2. Discuss with patients the expected effects of feminizing/masculinizing medications and the possible adverse health effects. These effects can include a reduction in fertility (Feldman & Safer, 2009; Hembree et al., 2009). Therefore, reproductive options should be discussed with patients before starting hormone therapy (see section IX).
3. Confirm that patients have the capacity to understand the risks and benefits of treatment and are capable of making an informed decision about medical care.
4. Provide ongoing medical monitoring, including regular physical and laboratory examination to monitor hormone effectiveness and side effects.
5. Communicate as needed with a patient's primary care provider, mental health professional, and surgeon.
6. If needed, provide patients with a brief written statement indicating that they are under medical supervision and care that includes feminizing/masculinizing hormone therapy. Particularly during the early phases of hormone treatment, a patient may wish to carry this statement at all times to help prevent difficulties with the police and other authorities.

Depending on the clinical situation for providing hormones (see below), some of these responsibilities are less relevant. Thus, the degree of counseling, physical examinations, and laboratory evaluations should be individualized to a patient's needs.

Clinical Situations for Hormone Therapy

There are circumstances in which clinicians may be called upon to provide hormones without necessarily initiating or maintaining long-term feminizing/masculinizing hormone therapy. By acknowledging these different clinical situations (see below, from least to highest level of complexity), it may be possible to involve clinicians in feminizing/masculinizing hormone therapy who might not otherwise feel able to offer this treatment.

1. Bridging

Whether prescribed by another clinician or obtained through other means (e.g., purchased over the Internet), patients may present for care already on hormone therapy. Clinicians can provide a limited (1–6 month) prescription for hormones while helping patients find a provider who can prescribe long-term hormone therapy. Providers should assess a patient's current regimen for safety and drug interactions and substitute safer medications or doses when indicated (Dahl et al., 2006; Feldman & Safer, 2009). If hormones were previously prescribed, medical records should be requested (with the patient's permission) to obtain the results of baseline examinations and laboratory tests and any adverse events. Hormone providers should also communicate with any mental health professional who is currently involved in a patient's care. If a patient has never had a psychosocial assessment as recommended by the SOC (see section VII), clinicians should refer the patient to a qualified mental health professional if appropriate and feasible (Feldman & Safer, 2009). Providers who prescribe bridging hormones need to work with patients to establish limits as to the duration of bridging therapy.

2. Hormone Therapy Following Gonad Removal

Hormone replacement with estrogen or testosterone is usually continued lifelong after an oophorectomy or orchiectomy, unless medical contraindications arise. Because hormone doses are often decreased after these surgeries (Basson, 2001; Levy, Crown, & Reid, 2003; Moore, Wisniewski, & Dobs, 2003) and only adjusted for age and comorbid health concerns, hormone management in this situation is quite similar to hormone replacement in any hypogonadal patient.

3. Hormone Maintenance Prior to Gonad Removal

Once patients have achieved maximal feminizing/masculinizing benefits from hormones (typically two or more years), they remain on a maintenance dose. The maintenance dose is then adjusted for changes in health conditions, aging, or other considerations such as lifestyle changes (Dahl et al., 2006). When a patient on maintenance hormones presents for care, the provider should assess the patient's current regimen for safety and drug interactions and substitute safer medications or doses when indicated. The patient should continue to be monitored by physical examinations and laboratory testing on a regular basis, as outlined in the literature (Feldman & Safer, 2009; Hembree et al., 2009). The dose and form of hormones should be revisited regularly with any changes in the patient's health status and available evidence on the potential long-term risks of hormones (See *Hormone Regimens*, below).

4. Initiating Hormonal Feminization/Masculinization

This clinical situation requires the greatest commitment in terms of provider time and expertise. Hormone therapy must be individualized based on a patient's goals, the risk/benefit ratio of medications, the presence of other medical conditions, and consideration of social and economic issues. Although a wide variety of hormone regimens have been published (Dahl et al., 2006; Hembree et al., 2009; Moore et al., 2003), there are no published reports of randomized clinical trials comparing safety and efficacy. Despite this variation, a reasonable framework for initial risk assessment and ongoing monitoring of hormone therapy can be constructed, based on the efficacy and safety evidence presented above.

Risk Assessment and Modification for Initiating Hormone Therapy

The initial evaluation for hormone therapy assesses a patient's clinical goals and risk factors for hormone-related adverse events. During the risk assessment, the patient and clinician should develop a plan for reducing risks wherever possible, either prior to initiating therapy or as part of ongoing harm reduction.

All assessments should include a thorough physical exam, including weight, height, and blood pressure. The need for breast, genital, and rectal exams, which are sensitive issues for most transsexual, transgender, and gender-nonconforming patients, should be based on individual risks and preventive health care needs (Feldman & Goldberg, 2006; Feldman, 2007).

Preventive Care

Hormone providers should address preventive health care with patients, particularly if a patient does not have a primary care provider. Depending on a patient's age and risk profile, there may be appropriate screening tests or exams for conditions affected by hormone therapy. Ideally, these screening tests should be carried out prior to the start of hormone therapy.

Risk Assessment and Modification for Feminizing Hormone Therapy (MtF)

There are no absolute contraindications to feminizing therapy per se, but absolute contraindications exist for the different feminizing agents, particularly estrogen. These include previous venous thrombotic events related to an underlying hypercoagulable condition, history of estrogen-sensitive neoplasm, and end-stage chronic liver disease (Gharib et al., 2005).

Other medical conditions, as noted in Table 2 and Appendix B, can be exacerbated by estrogen or androgen blockade, and therefore should be evaluated and reasonably well controlled prior to starting hormone therapy (Feldman & Safer, 2009; Hembree et al., 2009). Clinicians should particularly attend to tobacco use, as it is associated with increased risk of venous thrombosis, which is further increased with estrogen use. Consultation with a cardiologist may be advisable for patients with known cardio- or cerebrovascular disease.

Baseline laboratory values are important to both assess initial risk and evaluate possible future adverse events. Initial labs should be based on the risks of feminizing hormone therapy outlined in Table 2, as well as individual patient risk factors, including family history. Suggested initial lab panels have been published (Feldman & Safer, 2009; Hembree et al., 2009). These can be modified for patients or health care systems with limited resources, and in otherwise healthy patients.

Risk Assessment and Modification for Masculinizing Hormone Therapy (FtM)

Absolute contraindications to testosterone therapy include pregnancy, unstable coronary artery disease, and untreated polycythemia with a hematocrit of 55% or higher (Carnegie, 2004). Because the aromatization of testosterone to estrogen may increase risk in patients with a history of breast or other estrogen dependent cancers (Moore et al., 2003), consultation with an oncologist may be indicated prior to hormone use. Comorbid conditions likely to be exacerbated by testosterone use should be evaluated and treated, ideally prior to starting hormone therapy (Feldman & Safer, 2009; Hembree et al., 2009). Consultation with a cardiologist may be advisable for patients with known cardio- or cerebrovascular disease. (Dhejne et al., 2011).

An increased prevalence of polycystic ovarian syndrome (PCOS) has been noted among FtM patients even in the absence of testosterone use (Baba et al., 2007; Balen, Schachter, Montgomery, Reid, & Jacobs, 1993; Bosinski et al., 1997). While there is no evidence that PCOS is related to the development of a transsexual, transgender, or gender-nonconforming identity, PCOS is associated with increased risk of diabetes, cardiac disease, high blood pressure, and ovarian and endometrial cancers (Cattrall & Healy, 2004). Signs and symptoms of PCOS should be evaluated prior to initiating testosterone therapy, as testosterone may affect many of these conditions. Testosterone can affect the developing fetus (*Physicians' Desk Reference*, 2010), and patients at risk of becoming pregnant require highly effective birth control.

Baseline laboratory values are important to both assess initial risk and evaluate possible future adverse events. Initial labs should be based on the risks of masculinizing hormone therapy outlined in Table 2, as well as individual patient risk factors, including family history. Suggested initial lab panels have been published (Feldman & Safer, 2009; Hembree et al., 2009). These can be modified for patients or health care systems with limited resources, and in otherwise healthy patients.

Clinical Monitoring During Hormone Therapy for Efficacy and Adverse Events

The purpose of clinical monitoring during hormone use is to assess the degree of feminization/masculinization and the possible presence of adverse effects of medication. However, as with the monitoring of any long-term medication, monitoring should take place in the context of comprehensive health care. Suggested clinical monitoring protocols have been published (Feldman & Safer, 2009; Hembree et al., 2009). Patients with comorbid medical conditions may need to be monitored more frequently. Healthy patients in geographically remote or resource-poor areas may be able to use alternative strategies, such as telehealth, or cooperation with local providers such as nurses and physician assistants. In the absence of other indications, health professionals may prioritize monitoring for those risks that are either likely to be increased by hormone therapy or possibly increased by hormone therapy but clinically serious in nature.

Efficacy and Risk Monitoring During Feminizing Hormone Therapy (MtF)

The best assessment of hormone efficacy is clinical response: Is a patient developing a feminized body while minimizing masculine characteristics, consistent with that patient's gender goals? In order to more rapidly predict the hormone dosages that will achieve clinical response, one can measure testosterone levels for suppression below the upper limit of the normal female range and estradiol levels within a premenopausal female range but well below supraphysiologic levels (Feldman & Safer, 2009; Hembree et al., 2009).

Monitoring for adverse events should include both clinical and laboratory evaluation. Follow-up should include careful assessment for signs of cardiovascular impairment and venous thromboembolism (VTE) through measurement of blood pressure, weight, and pulse; heart and lung exams; and examination of the extremities for peripheral edema, localized swelling, or pain (Feldman & Safer, 2009). Laboratory monitoring should be based on the risks of hormone therapy described above, a patient's individual comorbidities and risk factors, and the specific hormone regimen itself. Specific lab-monitoring protocols have been published (Feldman & Safer, 2009; Hembree et al., 2009).

Efficacy and Risk Monitoring During Masculinizing Hormone Therapy (FtM)

The best assessment of hormone efficacy is clinical response: Is a patient developing a masculinized body while minimizing feminine characteristics, consistent with that patient's gender goals? Clinicians can achieve a good clinical response with the least likelihood of adverse events by maintaining testosterone levels within the normal male range while avoiding supraphysiological

levels (Dahl et al., 2006; Hembree et al., 2009). For patients using intramuscular (IM) testosterone cypionate or enanthate, some clinicians check trough levels while others prefer midcycle levels (Dahl et al., 2006; Hembree et al., 2009; Tangpricha, Turner, Malabanan, & Holick, 2001; Tangpricha, Ducharme, Barber, & Chipkin, 2003).

Monitoring for adverse events should include both clinical and laboratory evaluation. Follow-up should include careful assessment for signs and symptoms of excessive weight gain, acne, uterine break-through bleeding, and cardiovascular impairment, as well as psychiatric symptoms in at-risk patients. Physical examinations should include measurement of blood pressure, weight, and pulse; and heart, lung, and skin exams (Feldman & Safer, 2009). Laboratory monitoring should be based on the risks of hormone therapy described above, a patient's individual comorbidities and risk factors, and the specific hormone regimen itself. Specific lab monitoring protocols have been published (Feldman & Safer, 2009; Hembree et al., 2009).

Hormone Regimens

To date, no controlled clinical trials of any feminizing/masculinizing hormone regimen have been conducted to evaluate safety or efficacy in producing physical transition. As a result, wide variation in doses and types of hormones have been published in the medical literature (Moore et al., 2003; Tangpricha et al., 2003; van Kesteren, Asscheman, Megens, & Gooren, 1997). In addition, access to particular medications may be limited by a patient's geographical location and/or social or economic situations. For these reasons, WPATH does not describe or endorse a particular feminizing/masculinizing hormone regimen. Rather, the medication classes and routes of administration used in most published regimens are broadly reviewed.

As outlined above, there are demonstrated safety differences in individual elements of various regimens. The Endocrine Society Guidelines (Hembree et al., 2009) and Feldman and Safer (2009) provide specific guidance regarding the types of hormones and suggested dosing to maintain levels within physiologic ranges for a patient's desired gender expression (based on goals of full feminization/masculinization). It is strongly recommend that hormone providers regularly review the literature for new information and use those medications that safely meet individual patient needs with available local resources.

Regimens for Feminizing Hormone Therapy (MtF)

Estrogen

Use of oral estrogen, and specifically ethinyl estradiol, appears to increase the risk of VTE. Because of this safety concern, ethinyl estradiol is not recommended for feminizing hormone therapy. Transdermal estrogen is recommended for those patients with risks factors for VTE. The risk of adverse events increases with higher doses, particular doses resulting in supraphysiologic levels (Hembree et al., 2009). Patients with co-morbid conditions that can be affected by estrogen should avoid oral estrogen if possible and be started at lower levels. Some patients may not be able to safely use the levels of estrogen needed to get the desired results. This possibility needs to be discussed with patients well in advance of starting hormone therapy.

Androgen-reducing medications ("anti-androgens")

A combination of estrogen and "anti-androgens" is the most commonly studied regimen for feminization. Androgen-reducing medications, from a variety of classes of drugs, have the effect of reducing either endogenous testosterone levels or testosterone activity, and thus diminishing masculine characteristics such as body hair. They minimize the dosage of estrogen needed to suppress testosterone, thereby reducing the risks associated with high-dose exogenous estrogen (Prior, Vigna, Watson, Diewold, & Robinow, 1986; Prior, Vigna, & Watson, 1989).

Common anti-androgens include the following:

- Spironolactone, an antihypertensive agent, directly inhibits testosterone secretion and androgen binding to the androgen receptor. Blood pressure and electrolytes need to be monitored because of the potential for hyperkalemia.
- Cyproterone acetate is a progestational compound with anti-androgenic properties. This medication is not approved in the United States because of concerns over potential hepatotoxicity, but it is widely used elsewhere (De Cuypere et al., 2005).
- GnRH agonists (e.g., goserelin, buserelin, triptorelin) are neurohormones that block the gonadotropin-releasing hormone receptor, thus blocking the release of follicle stimulating hormone and luteinizing hormone. This leads to highly effective gonadal blockade. However, these medications are expensive and only available as injectables or implants.
- 5-alpha reductase inhibitors (finasteride and dutasteride) block the conversion of testosterone to the more active agent, 5-alpha-dihydrotestosterone. These medications have beneficial effects on scalp hair loss, body hair growth, sebaceous glands, and skin consistency.

Cyproterone and spironolactone are the most commonly used anti-androgens and are likely the most cost-effective.

Progestins

With the exception of cyproterone, the inclusion of progestins in feminizing hormone therapy is controversial (Oriol, 2000). Because progestins play a role in mammary development on a cellular level, some clinicians believe that these agents are necessary for full breast development (Basson & Prior, 1998; Oriol, 2000). However, a clinical comparison of feminization regimens with and without progestins found that the addition of progestins neither enhanced breast growth nor lowered serum levels of free testosterone (Meyer et al., 1986). There are concerns regarding potential adverse effects of progestins, including depression, weight gain, and lipid changes (Meyer et al., 1986; Tangpricha et al., 2003). Progestins (especially medroxyprogesterone) are also suspected to increase breast cancer risk and cardiovascular risk in women (Rossouw et al., 2002). Micronized progesterone may be better tolerated and have a more favorable impact on the lipid profile than medroxyprogesterone does (de Lignières, 1999; Fitzpatrick, Pace, & Wiita, 2000).

Regimens for Masculinizing Hormone Therapy (FtM)

Testosterone

Testosterone generally can be given orally, transdermally, or parenterally (IM), although buccal and implantable preparations are also available. Oral testosterone undecanoate, available outside the United States, results in lower serum testosterone levels than nonoral preparations and has limited efficacy in suppressing menses (Feldman, 2005, April; Moore et al., 2003). Because intramuscular testosterone cypionate or enanthate are often administered every 2–4 weeks, some patients may notice cyclic variation in effects (e.g., fatigue and irritability at the end of the injection cycle, aggression or expansive mood at the beginning of the injection cycle), as well as more time outside the normal physiologic levels (Jockenhövel, 2004). This may be mitigated by using a lower but more frequent dosage schedule or by using a daily transdermal preparation (Dobs et al., 1999; Jockenhövel, 2004; Nieschlag et al., 2004). Intramuscular testosterone undecanoate (not currently available in the United States) maintains stable, physiologic testosterone levels over approximately 12 weeks and has been effective in both the setting of hypogonadism and in FtM individuals (Mueller, Kiesewetter, Binder, Beckmann, & Dittrich, 2007; Zitzmann, Saad, & Nieschlag, 2006). There is evidence that transdermal and intramuscular testosterone achieve similar masculinizing results, although the timeframe may be somewhat slower with transdermal preparations (Feldman, 2005, April). Especially as patients age, the goal is to use the lowest dose needed to maintain the desired clinical result, with appropriate precautions being made to maintain bone density.

Other agents

Progestins, most commonly medroxyprogesterone, can be used for a short period of time to assist with menstrual cessation early in hormone therapy. GnRH agonists can be used similarly, as well as for refractory uterine bleeding in patients without an underlying gynecological abnormality.

Bioidentical and Compounded Hormones

As discussion surrounding the use of bioidentical hormones in postmenopausal hormone replacement has heightened, interest has also increased in the use of similar compounds in feminizing/masculinizing hormone therapy. There is no evidence that custom compounded bioidentical hormones are safer or more effective than government agency-approved bioidentical hormones (Sood, Shuster, Smith, Vincent, & Jatoi, 2011). Therefore, it has been advised by the North American Menopause Society (2010) and others to assume that, whether the hormone is from a compounding pharmacy or not, if the active ingredients are similar, it should have a similar side-effect profile. WPATH concurs with this assessment.

IX

Reproductive Health

Many transgender, transsexual, and gender-nonconforming people will want to have children. Because feminizing/masculinizing hormone therapy limits fertility (Darney, 2008; Zhang, Gu, Wang, Cui, & Bremner, 1999), it is desirable for patients to make decisions concerning fertility before starting hormone therapy or undergoing surgery to remove/alter their reproductive organs. Cases are known of people who received hormone therapy and genital surgery and later regretted their inability to parent genetically related children (De Sutter, Kira, Verschoor, & Hotimsky, 2002).

Health care professionals—including mental health professionals recommending hormone therapy or surgery, hormone-prescribing physicians, and surgeons—should discuss reproductive options with patients prior to initiation of these medical treatments for gender dysphoria. These discussions should occur even if patients are not interested in these issues at the time of treatment, which may be more common for younger patients (De Sutter, 2009). Early discussions are desirable, but not always possible. If an individual has not had complete sex reassignment surgery, it may be possible to stop hormones long enough for natal hormones to recover, allowing

the production of mature gametes (Payer, Meyer, & Walker, 1979; Van den Broecke, Van der Elst, Liu, Hovatta, & Dhont, 2001).

Besides debate and opinion papers, very few research papers have been published on the reproductive health issues of individuals receiving different medical treatments for gender dysphoria. Another group who faces the need to preserve reproductive function in light of loss or damage to their gonads are people with malignancies that require removal of reproductive organs or use of damaging radiation or chemotherapy. Lessons learned from that group can be applied to people treated for gender dysphoria.

MtF patients, especially those who have not already reproduced, should be informed about sperm-preservation options and encouraged to consider banking their sperm prior to hormone therapy. In a study examining testes that were exposed to high-dose estrogen (Payer et al., 1979), findings suggest that stopping estrogen may allow the testes to recover. In an article reporting on the opinions of MtF individuals towards sperm freezing (De Sutter et al., 2002), the vast majority of 121 survey respondents felt that the availability of freezing sperm should be discussed and offered by the medical world. Sperm should be collected before hormone therapy or after stopping the therapy until the sperm count rises again. Cryopreservation should be discussed even if there is poor semen quality. In adults with azoospermia, a testicular biopsy with subsequent cryopreservation of biopsied material for sperm is possible, but may not be successful.

Reproductive options for FtM patients might include oocyte (egg) or embryo freezing. The frozen gametes and embryo could later be used with a surrogate woman to carry to pregnancy. Studies of women with polycystic ovarian disease suggest that the ovary can recover in part from the effects of high testosterone levels (Hunter & Sterrett, 2000). Stopping the testosterone briefly might allow for ovaries to recover enough to release eggs; success likely depends on the patient's age and duration of testosterone treatment. While not systematically studied, some FtM individuals are doing exactly that, and some have been able to become pregnant and deliver children (More, 1998).

Patients should be advised that these techniques are not available everywhere and can be very costly. Transsexual, transgender, and gender-nonconforming people should not be refused reproductive options for any reason.

A special group of individuals are prepubertal or pubertal adolescents who will never develop reproductive function in their natal sex due to blockers or cross-gender hormones. At this time there is no technique for preserving function from the gonads of these individuals.



Voice and Communication Therapy

Communication, both verbal and nonverbal, is an important aspect of human behavior and gender expression. Transsexual, transgender, and gender-nonconforming people might seek the assistance of a voice and communication specialist to develop vocal characteristics (e.g., pitch, intonation, resonance, speech rate, phrasing patterns) and non-verbal communication patterns (e.g., gestures, posture/movement, facial expressions) that facilitate comfort with their gender identity. Voice and communication therapy may help to alleviate gender dysphoria and be a positive and motivating step towards achieving one's goals for gender role expression.

Competency of Voice and Communication Specialists Working with Transsexual, Transgender, and Gender-Nonconforming Clients

Specialists may include speech-language pathologists, speech therapists, and speech-voice clinicians. In most countries the professional association for speech-language pathologists requires specific qualifications and credentials for membership. In some countries the government regulates practice through licensing, certification, or registration processes (American Speech-Language-Hearing Association, 2011; Canadian Association of Speech-Language Pathologists and Audiologists; Royal College of Speech Therapists, United Kingdom; Speech Pathology Australia).

The following are recommended minimum credentials for voice and communication specialists working with transsexual, transgender, and gender-nonconforming clients:

1. Specialized training and competence in the assessment and development of communication skills in transsexual, transgender, and gender-nonconforming clients.
2. A basic understanding of transgender health, including hormonal and surgical treatments for feminization/masculinization and trans-specific psychosocial issues as outlined in the *SOC*; and familiarity with basic sensitivity protocols such as the use of preferred gender pronoun and name (Canadian Association of Speech-Language Pathologists and Audiologists; Royal College of Speech Therapists, United Kingdom; Speech Pathology Australia).

3. Continuing education in the assessment and development of communication skills in transsexual, transgender, and gender-nonconforming clients. This may include attendance at professional meetings, workshops, or seminars; participation in research related to gender identity issues; independent study; or mentoring from an experienced, certified clinician.

Other professionals such as vocal coaches, theatre professionals, singing teachers, and movement experts may play a valuable adjunct role. Such professionals will ideally have experience working with, or be actively collaborating with, speech-language pathologists.

Assessment and Treatment Considerations

The overall purpose of voice and communication therapy is to help clients adapt their voice and communication in a way that is both safe and authentic, resulting in communication patterns that clients feel are congruent with their gender identity and that reflect their sense of self (Adler, Hirsch, & Mordaunt, 2006). It is essential that voice and communication specialists be sensitive to individual communication preferences. Communication—style, voice, choice of language, etc.—is personal. Individuals should not be counseled to adopt behaviors with which they are not comfortable or which do not feel authentic. Specialists can best serve their clients by taking the time to understand a person's gender concerns and goals for gender-role expression (American Speech-Language-Hearing Association, 2011; Canadian Association of Speech-Language Pathologists and Audiologists; Royal College of Speech Therapists, United Kingdom; Speech Pathology Australia).

Individuals may choose the communication behaviors that they wish to acquire in accordance with their gender identity. These decisions are also informed and supported by the knowledge of the voice and communication specialist and by the assessment data for a specific client (Hancock, Krissinger, & Owen, 2010). Assessment includes a client's self-evaluation and a specialist's evaluation of voice, resonance, articulation, spoken language, and non-verbal communication (Adler et al., 2006; Hancock et al., 2010).

Voice-and-communication treatment plans are developed by considering the available research evidence, the clinical knowledge and experience of the specialist, and the client's own goals and values (American Speech-Language-Hearing Association, 2011; Canadian Association of Speech-Language Pathologists and Audiologists; Royal College of Speech Therapists, United Kingdom; Speech Pathology Australia). Targets of treatment typically include pitch, intonation, loudness and stress patterns, voice quality, resonance, articulation, speech rate and phrasing, language, and nonverbal communication (Adler et al., 2006; Davies & Goldberg, 2006; de Bruin, Coerts, & Greven, 2000; Gelfer, 1999; McNeill, 2006; Oates & Dacakis, 1983). Treatment may involve individual and/or group sessions. The frequency and duration of treatment will vary according to a client's needs. Existing protocols for voice-and-communication treatment can be considered in

developing an individualized therapy plan (Carew, Dacakis, & Oates, 2007; Dacakis, 2000; Davies & Goldberg, 2006; Gelfer, 1999; McNeill, Wilson, Clark, & Deakin, 2008; Mount & Salmon, 1988).

Feminizing or masculinizing the voice involves non-habitual use of the voice production mechanism. Prevention measures are necessary to avoid the possibility of vocal misuse and long-term vocal damage. All voice and communication therapy services should therefore include a vocal health component (Adler et al., 2006).

Vocal Health Considerations After Voice Feminization Surgery

As noted in section XI, some transsexual, transgender, and gender-nonconforming people will undergo voice feminization surgery. (Voice deepening can be achieved through masculinizing hormone therapy, but feminizing hormones do not have an impact on the adult MtF voice.) There are varying degrees of satisfaction, safety, and long-term improvement in patients who have had such surgery. It is recommended that individuals undergoing voice feminization surgery also consult a voice and communication specialist to maximize the surgical outcome, help protect vocal health, and learn nonpitch related aspects of communication. Voice surgery procedures should include follow-up sessions with a voice and communication specialist who is licensed and/or credentialed by the board responsible for speech therapists/speech-language pathologists in that country (Kanagalingam et al., 2005; Neumann & Welzel, 2004).

XI

Surgery

Sex Reassignment Surgery Is Effective and Medically Necessary

Surgery – particularly genital surgery – is often the last and the most considered step in the treatment process for gender dysphoria. While many transsexual, transgender, and gender-nonconforming individuals find comfort with their gender identity, role, and expression without surgery, for many others surgery is essential and medically necessary to alleviate their gender dysphoria (Hage & Karim, 2000). For the latter group, relief from gender dysphoria cannot be achieved

without modification of their primary and/or secondary sex characteristics to establish greater congruence with their gender identity. Moreover, surgery can help patients feel more at ease in the presence of sex partners or in venues such as physicians' offices, swimming pools, or health clubs. In some settings, surgery might reduce risk of harm in the event of arrest or search by police or other authorities.

Follow-up studies have shown an undeniable beneficial effect of sex reassignment surgery on postoperative outcomes such as subjective well-being, cosmesis, and sexual function (De Cuypere et al., 2005; Gijls & Brewaeys, 2007; Klein & Gorzalka, 2009; Pfäfflin & Junge, 1998). Additional information on the outcomes of surgical treatments are summarized in Appendix D.

Ethical Questions Regarding Sex Reassignment Surgery

In ordinary surgical practice, pathological tissues are removed to restore disturbed functions, or alterations are made to body features to improve a patient's self image. Some people, including some health professionals, object on ethical grounds to surgery as a treatment for gender dysphoria, because these conditions are thought not to apply.

It is important that health professionals caring for patients with gender dysphoria feel comfortable about altering anatomically normal structures. In order to understand how surgery can alleviate the psychological discomfort and distress of individuals with gender dysphoria, professionals need to listen to these patients discuss their symptoms, dilemmas, and life histories. The resistance against performing surgery on the ethical basis of "above all do no harm" should be respected, discussed, and met with the opportunity to learn from patients themselves about the psychological distress of having gender dysphoria and the potential for harm caused by denying access to appropriate treatments.

Genital and breast/chest surgical treatments for gender dysphoria are not merely another set of elective procedures. Typical elective procedures involve only a private mutually consenting contract between a patient and a surgeon. Genital and breast/chest surgeries as medically necessary treatments for gender dysphoria are to be undertaken only after assessment of the patient by qualified mental health professionals, as outlined in section VII of the SOC. These surgeries may be performed once there is written documentation that this assessment has occurred and that the person has met the criteria for a specific surgical treatment. By following this procedure, mental health professionals, surgeons, and patients share responsibility for the decision to make irreversible changes to the body.

It is unethical to deny availability or eligibility for sex reassignment surgeries solely on the basis of blood seropositivity for blood-borne infections such as HIV or hepatitis C or B.

Relationship of Surgeons with Mental Health Professionals, Hormone-Prescribing Physicians (if Applicable), and Patients (Informed Consent)

The role of a surgeon in the treatment of gender dysphoria is not that of a mere technician. Rather, conscientious surgeons will have insight into each patient's history and the rationale that led to the referral for surgery. To that end, surgeons must talk at length with their patients and have close working relationships with other health professionals who have been actively involved in their clinical care.

Consultation is readily accomplished when a surgeon practices as part of an interdisciplinary health care team. In the absence of this, a surgeon must be confident that the referring mental health professional(s), and if applicable the physician who prescribes hormones, is/are competent in the assessment and treatment of gender dysphoria, because the surgeon is relying heavily on his/her/their expertise.

Once a surgeon is satisfied that the criteria for specific surgeries have been met (as outlined below), surgical treatment should be considered and a preoperative surgical consultation should take place. During this consultation, the procedure and postoperative course should be extensively discussed with the patient. Surgeons are responsible for discussing all of the following with patients seeking surgical treatments for gender dysphoria:

- The different surgical techniques available (with referral to colleagues who provide alternative options);
- The advantages and disadvantages of each technique;
- The limitations of a procedure to achieve "ideal" results; surgeons should provide a full range of before-and-after photographs of their own patients, including both successful and unsuccessful outcomes;
- The inherent risks and possible complications of the various techniques; surgeons should inform patients of their own complication rates with each procedure.

These discussions are the core of the informed consent process, which is both an ethical and legal requirement for any surgical procedure. Ensuring that patients have a realistic expectation of outcomes is important in achieving a result that will alleviate their gender dysphoria.

All of this information should be provided to patients in writing, in a language in which they are fluent, and in graphic illustrations. Patients should receive the information in advance (possibly

via the Internet) and be given ample time to review it carefully. The elements of informed consent should always be discussed face-to-face prior to the surgical intervention. Questions can then be answered and written informed consent can be provided by the patient. Because these surgeries are irreversible, care should be taken to ensure that patients have sufficient time to absorb information fully before they are asked to provide informed consent. A minimum of 24 hours is suggested.

Surgeons should provide immediate aftercare and consultation with other physicians serving the patient in the future. Patients should work with their surgeon to develop an adequate aftercare plan for the surgery.

Overview of Surgical Procedures for the Treatment of Patients with Gender Dysphoria

For the Male-to-Female (MtF) Patient, Surgical Procedures May Include the Following:

1. Breast/chest surgery: augmentation mammoplasty (implants/lipofilling);
2. Genital surgery: penectomy, orchiectomy, vaginoplasty, clitoroplasty, vulvoplasty;
3. Nongenital, nonbreast surgical interventions: facial feminization surgery, liposuction, lipofilling, voice surgery, thyroid cartilage reduction, gluteal augmentation (implants/lipofilling), hair reconstruction, and various aesthetic procedures.

For the Female-to-Male (FtM) Patient, Surgical Procedures May Include the Following:

1. Breast/chest surgery: subcutaneous mastectomy, creation of a male chest;
2. Genital surgery: hysterectomy/salpingo-oophorectomy, reconstruction of the fixed part of the urethra, which can be combined with a metoidioplasty or with a phalloplasty (employing a pedicled or free vascularized flap), vaginectomy, scrotoplasty, and implantation of erection and/or testicular prostheses;
3. Nongenital, nonbreast surgical interventions: voice surgery (rare), liposuction, lipofilling, pectoral implants, and various aesthetic procedures.

Reconstructive Versus Aesthetic Surgery

The question of whether sex reassignment surgery should be considered “aesthetic” surgery or “reconstructive” surgery is pertinent not only from a philosophical point of view, but also from a financial point of view. Aesthetic or cosmetic surgery is mostly regarded as not medically necessary and therefore is typically paid for entirely by the patient. In contrast, reconstructive procedures are considered medically necessary—with unquestionable therapeutic results—and thus paid for partially or entirely by national health systems or insurance companies.

Unfortunately, in the field of plastic and reconstructive surgery (both in general and specifically for gender-related surgeries), there is no clear distinction between what is purely reconstructive and what is purely cosmetic. Most plastic surgery procedures actually are a mixture of both reconstructive and cosmetic components.

While most professionals agree that genital surgery and mastectomy cannot be considered purely cosmetic, opinions diverge as to what degree other surgical procedures (e.g., breast augmentation, facial feminization surgery) can be considered purely reconstructive. Although it may be much easier to see a phalloplasty or a vaginoplasty as an intervention to end lifelong suffering, for certain patients an intervention like a reduction rhinoplasty can have a radical and permanent effect on their quality of life, and therefore is much more medically necessary than for somebody without gender dysphoria.

Criteria for Surgeries

As for all of the *SOC*, the criteria for initiation of surgical treatments for gender dysphoria were developed to promote optimal patient care. While the *SOC* allow for an individualized approach to best meet a patient’s health care needs, a criterion for all breast/chest and genital surgeries is documentation of persistent gender dysphoria by a qualified mental health professional. For some surgeries, additional criteria include preparation and treatment consisting of feminizing/masculinizing hormone therapy and one year of continuous living in a gender role that is congruent with one’s gender identity.

These criteria are outlined below. Based on the available evidence and expert clinical consensus, different recommendations are made for different surgeries.

The *SOC* do not specify an order in which different surgeries should occur. The number and sequence of surgical procedures may vary from patient to patient, according to their clinical needs.

Criteria for Breast/Chest Surgery (One Referral)

Criteria for mastectomy and creation of a male chest in FtM patients:

1. Persistent, well-documented gender dysphoria;
2. Capacity to make a fully informed decision and to consent for treatment;
3. Age of majority in a given country (if younger, follow the SOC for children and adolescents);
4. If significant medical or mental health concerns are present, they must be reasonably well controlled.

Hormone therapy is not a prerequisite.

Criteria for breast augmentation (implants/lipofilling) in MtF patients:

1. Persistent, well-documented gender dysphoria;
2. Capacity to make a fully informed decision and to consent for treatment;
3. Age of majority in a given country (if younger, follow the SOC for children and adolescents);
4. If significant medical or mental health concerns are present, they must be reasonably well controlled.

Although not an explicit criterion, it is recommended that MtF patients undergo feminizing hormone therapy (minimum 12 months) prior to breast augmentation surgery. The purpose is to maximize breast growth in order to obtain better surgical (aesthetic) results.

Criteria for Genital Surgery (Two Referrals)

The criteria for genital surgery are specific to the type of surgery being requested.

Criteria for hysterectomy and salpingo-oophorectomy in FtM patients and for orchiectomy in MtF patients:

1. Persistent, well-documented gender dysphoria;

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2. Capacity to make a fully informed decision and to consent for treatment;
3. Age of majority in a given country;
4. If significant medical or mental health concerns are present, they must be well controlled.
5. 12 continuous months of hormone therapy as appropriate to the patient's gender goals (unless hormones are not clinically indicated for the individual).

The aim of hormone therapy prior to gonadectomy is primarily to introduce a period of reversible estrogen or testosterone suppression, before the patient undergoes irreversible surgical intervention.

These criteria do not apply to patients who are having these procedures for medical indications other than gender dysphoria.

Criteria for metoidioplasty or phalloplasty in FtM patients and for vaginoplasty in MtF patients:

1. Persistent, well-documented gender dysphoria;
2. Capacity to make a fully informed decision and to consent for treatment;
3. Age of majority in a given country;
4. If significant medical or mental health concerns are present, they must be well controlled;
5. 12 continuous months of hormone therapy as appropriate to the patient's gender goals (unless hormones are not clinically indicated for the individual).
6. 12 continuous months of living in a gender role that is congruent with their gender identity.

Although not an explicit criterion, it is recommended that these patients also have regular visits with a mental health or other medical professional.

Rationale for a preoperative, 12-month experience of living in an identity-congruent gender role:

The criterion noted above for some types of genital surgeries—i.e., that patients engage in 12 continuous months of living in a gender role that is congruent with their gender identity—is based on expert clinical consensus that this experience provides ample opportunity for patients to experience and socially adjust in their desired gender role, before undergoing irreversible surgery. As noted in section VII, the social aspects of changing one's gender role are usually challenging—

often more so than the physical aspects. Changing gender role can have profound personal and social consequences, and the decision to do so should include an awareness of what the familial, interpersonal, educational, vocational, economic, and legal challenges are likely to be, so that people can function successfully in their gender role. Support from a qualified mental health professional and from peers can be invaluable in ensuring a successful gender role adaptation (Bockting, 2008).

The duration of 12 months allows for a range of different life experiences and events that may occur throughout the year (e.g., family events, holidays, vacations, season-specific work or school experiences). During this time, patients should present consistently, on a day-to-day basis and across all settings of life, in their desired gender role. This includes coming out to partners, family, friends, and community members (e.g., at school, work, other settings).

Health professionals should clearly document a patient's experience in the gender role in the medical chart, including the start date of living full time for those who are preparing for genital surgery. In some situations, if needed, health professionals may request verification that this criterion has been fulfilled: They may communicate with individuals who have related to the patient in an identity-congruent gender role, or request documentation of a legal name and/or gender marker change, if applicable.

Surgery for People with Psychotic Conditions and Other Serious Mental Illnesses

When patients with gender dysphoria are also diagnosed with severe psychiatric disorders and impaired reality testing (e.g., psychotic episodes, bipolar disorder, dissociative identity disorder, borderline personality disorder), an effort must be made to improve these conditions with psychotropic medications and/or psychotherapy before surgery is contemplated. (Dhejne et al., 2011). Reevaluation by a mental health professional qualified to assess and manage psychotic conditions should be conducted prior to surgery, describing the patient's mental status and readiness for surgery. It is preferable that this mental health professional be familiar with the patient. No surgery should be performed while a patient is actively psychotic (De Cuypere & Vercauteren, 2009).

Competency of Surgeons Performing Breast/Chest or Genital Surgery

Physicians who perform surgical treatments for gender dysphoria should be urologists, gynecologists, plastic surgeons, or general surgeons, and board-certified as such by the relevant national

and/or regional association. Surgeons should have specialized competence in genital reconstructive techniques as indicated by documented supervised training with a more experienced surgeon. Even experienced surgeons must be willing to have their surgical skills reviewed by their peers. An official audit of surgical outcomes and publication of these results would be greatly reassuring to both referring health professionals and patients. Surgeons should regularly attend professional meetings where new techniques are presented. The internet is often effectively used by patients to share information on their experience with surgeons and their teams.

Ideally, surgeons should be knowledgeable about more than one surgical technique for genital reconstruction so that they, in consultation with patients, can choose the ideal technique for each individual. Alternatively, if a surgeon is skilled in a single technique and this procedure is either not suitable for or desired by a patient, the surgeon should inform the patient about other procedures and offer referral to another appropriately skilled surgeon.

Breast/Chest Surgery Techniques and Complications

Although breast/chest appearance is an important secondary sex characteristic, breast presence or size is not involved in the legal definitions of sex and gender and is not necessary for reproduction. The performance of breast/chest operations for treatment of gender dysphoria should be considered with the same care as beginning hormone therapy, as both produce relatively irreversible changes to the body.

For the MtF patient, a breast augmentation (sometimes called “chest reconstruction”) is not different from the procedure in a natal female patient. It is usually performed through implantation of breast prostheses and occasionally with the lipofilling technique. Infections and capsular fibrosis are rare complications of augmentation mammoplasty in MtF patients (Kanhai, Hage, Karim, & Mulder, 1999).

For the FtM patient, a mastectomy or “male chest contouring” procedure is available. For many FtM patients, this is the only surgery undertaken. When the amount of breast tissue removed requires skin removal, a scar will result and the patient should be so informed. Complications of subcutaneous mastectomy can include nipple necrosis, contour irregularities, and unsightly scarring (Monstrey et al., 2008).

Genital Surgery Techniques and Complications

Genital surgical procedures for the MtF patient may include orchiectomy, penectomy, vaginoplasty, clitoroplasty, and labiaplasty. Techniques include penile skin inversion, pedicled colosigmoid

transplant, and free skin grafts to line the neovagina. Sexual sensation is an important objective in vaginoplasty, along with creation of a functional vagina and acceptable cosmesis.

Surgical complications of MtF genital surgery may include complete or partial necrosis of the vagina and labia, fistulas from the bladder or bowel into the vagina, stenosis of the urethra, and vaginas that are either too short or too small for coitus. While the surgical techniques for creating a neovagina are functionally and aesthetically excellent, anorgasmia following the procedure has been reported, and a second stage labiaplasty may be needed for cosmesis (Klein & Gorzalka, 2009; Lawrence, 2006).

Genital surgical procedures for FtM patients may include hysterectomy, salpingo-oophorectomy, vaginectomy, metoidioplasty, scrotoplasty, urethroplasty, placement of testicular prostheses, and phalloplasty. For patients without former abdominal surgery, the laparoscopic technique for hysterectomy and salpingo-oophorectomy is recommended to avoid a lower-abdominal scar. Vaginal access may be difficult as most patients are nulliparous and have often not experienced penetrative intercourse. Current operative techniques for phalloplasty are varied. The choice of techniques may be restricted by anatomical or surgical considerations and by a client's financial considerations. If the objectives of phalloplasty are a neophallus of good appearance, standing micturition, sexual sensation, and/or coital ability, patients should be clearly informed that there are several separate stages of surgery and frequent technical difficulties, which may require additional operations. Even metoidioplasty, which in theory is a one-stage procedure for construction of a microphallus, often requires more than one operation. The objective of standing micturition with this technique can not always be ensured (Monstrey et al., 2009).

Complications of phalloplasty in FtMs may include frequent urinary tract stenoses and fistulas, and occasionally necrosis of the neophallus. Metoidioplasty results in a micropenis, without the capacity for standing urination. Phalloplasty, using a pedicled or a free vascularized flap, is a lengthy, multi-stage procedure with significant morbidity that includes frequent urinary complications and unavoidable donor site scarring. For this reason, many FtM patients never undergo genital surgery other than hysterectomy and salpingo-oophorectomy (Hage & De Graaf, 1993).

Even patients who develop severe surgical complications seldom regret having undergone surgery. The importance of surgery can be appreciated by the repeated finding that quality of surgical results is one of the best predictors of the overall outcome of sex reassignment (Lawrence, 2006).

Other Surgeries

Other surgeries for assisting in body feminization include reduction thyroid chondroplasty (reduction of the Adam's apple), voice modification surgery, suction-assisted lipoplasty (contour

modeling) of the waist, rhinoplasty (nose correction), facial bone reduction, face-lift, and blepharoplasty (rejuvenation of the eyelid). Other surgeries for assisting in body masculinization include liposuction, lipofilling, and pectoral implants. Voice surgery to obtain a deeper voice is rare but may be recommended in some cases, such as when hormone therapy has been ineffective.

Although these surgeries do not require referral by mental health professionals, such professionals can play an important role in assisting clients in making a fully informed decision about the timing and implications of such procedures in the context of the social transition.

Although most of these procedures are generally labeled “purely aesthetic,” these same operations in an individual with severe gender dysphoria can be considered medically necessary, depending on the unique clinical situation of a given patient’s condition and life situation. This ambiguity reflects reality in clinical situations, and allows for individual decisions as to the need and desirability of these procedures.

XII

Postoperative Care and Follow-Up

Long-term postoperative care and follow-up after surgical treatments for gender dysphoria are associated with good surgical and psychosocial outcomes (Monstrey et al., 2009). Follow-up is important to a patient’s subsequent physical and mental health and to a surgeon’s knowledge about the benefits and limitations of surgery. Surgeons who operate on patients coming from long distances should include personal follow-up in their care plan and attempt to ensure affordable local long-term aftercare in their patients’ geographic region.

Postoperative patients may sometimes exclude themselves from follow-up by specialty providers, including the hormone-prescribing physician (for patients receiving hormones), not recognizing that these providers are often best able to prevent, diagnose, and treat medical conditions that are unique to hormonally and surgically treated patients. The need for follow-up equally extends to mental health professionals, who may have spent a longer period of time with the patient than any other professional and therefore are in an excellent position to assist in any postoperative adjustment difficulties. Health professionals should stress the importance of postoperative follow-up care with their patients and offer continuity of care.

Postoperative patients should undergo regular medical screening according to recommended guidelines for their age. This is discussed more in the next section.

XIII

Lifelong Preventive and Primary Care

Transsexual, transgender, and gender-nonconforming people need health care throughout their lives. For example, to avoid the negative secondary effects of having a gonadectomy at a relatively young age and/or receiving long-term, high-dose hormone therapy, patients need thorough medical care by providers experienced in primary care and transgender health. If one provider is not able to provide all services, ongoing communication among providers is essential.

Primary care and health maintenance issues should be addressed before, during, and after any possible changes in gender role and medical interventions to alleviate gender dysphoria. While hormone providers and surgeons play important roles in preventive care, every transsexual, transgender, and gender-nonconforming person should partner with a primary care provider for overall health care needs (Feldman, 2007).

General Preventive Health Care

Screening guidelines developed for the general population are appropriate for organ systems that are unlikely to be affected by feminizing/masculinizing hormone therapy. However, in areas such as cardiovascular risk factors, osteoporosis, and some cancers (breast, cervical, ovarian, uterine, and prostate), such general guidelines may either over- or underestimate the cost-effectiveness of screening individuals who are receiving hormone therapy.

Several resources provide detailed protocols for the primary care of patients undergoing feminizing/masculinizing hormone therapy, including therapy that is provided after sex reassignment surgeries (Center of Excellence for Transgender Health, UCSF, 2011; Feldman & Goldberg, 2006; Feldman, 2007; Gorton, Buth, & Spade, 2005). Clinicians should consult their national evidence-based guidelines and discuss screening with their patients in light of the effects of hormone therapy on their baseline risk.

Cancer Screening

Cancer screening of organ systems that are associated with sex can present particular medical and psychosocial challenges for transsexual, transgender, and gender-nonconforming patients and their health care providers. In the absence of large-scale prospective studies, providers are unlikely to have enough evidence to determine the appropriate type and frequency of cancer screenings for this population. Over-screening results in higher health care costs, high false positive rates, and often unnecessary exposure to radiation and/or diagnostic interventions such as biopsies. Under-screening results in diagnostic delay for potentially treatable cancers. Patients may find cancer screening gender affirming (such as mammograms for MtF patients) or both physically and emotionally painful (such as Pap smears offer continuity of care for FtM patients).

Urogenital Care

Gynecologic care may be necessary for transsexual, transgender, and gender-nonconforming people of both sexes. For FtM patients, such care is needed predominantly for individuals who have not had genital surgery. For MtF patients, such care is needed after genital surgery. While many surgeons counsel patients regarding postoperative urogenital care, primary care clinicians and gynecologists should also be familiar with the special genital concerns of this population.

All MtF patients should receive counseling regarding genital hygiene, sexuality, and prevention of sexually transmitted infections; those who have had genital surgery should also be counseled on the need for regular vaginal dilation or penetrative intercourse in order to maintain vaginal depth and width (van Trotsenburg, 2009). Due to the anatomy of the male pelvis, the axis and the dimensions of the neovagina differ substantially from those of a biologic vagina. This anatomic difference can affect intercourse if not understood by MtF patients and their partners (van Trotsenburg, 2009).

Lower urinary tract infections occur frequently in MtF patients who have had surgery because of the reconstructive requirements of the shortened urethra. In addition, these patients may suffer from functional disorders of the lower urinary tract; such disorders may be caused by damage of the autonomous nerve supply of the bladder floor during dissection between the rectum and the bladder, and by a change of the position of the bladder itself. A dysfunctional bladder (e.g., overactive bladder, stress or urge urinary incontinence) may occur after sex reassignment surgery (Hoebeke et al., 2005; Kuhn, Hildebrand, & Birkhauser, 2007).

Most FtM patients do not undergo vaginectomy (colpectomy). For patients who take masculinizing hormones, despite considerable conversion of testosterone to estrogens, atrophic changes of the vaginal lining can be observed regularly and may lead to pruritus or burning. Examination can be

both physically and emotionally painful, but lack of treatment can seriously aggravate the situation. Gynecologists treating the genital complaints of FtM patients should be aware of the sensitivity that patients with a male gender identity and masculine gender expression might have around having genitals typically associated with the female sex.

XIV

Applicability of the *Standards of Care* to People Living in Institutional Environments

The SOC in their entirety apply to all transsexual, transgender, and gender-nonconforming people, irrespective of their housing situation. People should not be discriminated against in their access to appropriate health care based on where they live, including institutional environments such as prisons or long-/intermediate-term health care facilities (Brown, 2009). Health care for transsexual, transgender, and gender-nonconforming people living in an institutional environment should mirror that which would be available to them if they were living in a non-institutional setting within the same community.

All elements of assessment and treatment as described in the SOC can be provided to people living in institutions (Brown, 2009). Access to these medically necessary treatments should not be denied on the basis of institutionalization or housing arrangements. If the in-house expertise of health professionals in the direct or indirect employ of the institution does not exist to assess and/or treat people with gender dysphoria, it is appropriate to obtain outside consultation from professionals who are knowledgeable about this specialized area of health care.

People with gender dysphoria in institutions may also have coexisting mental health conditions (Cole et al., 1997). These conditions should be evaluated and treated appropriately.

People who enter an institution on an appropriate regimen of hormone therapy should be continued on the same, or similar, therapies and monitored according to the SOC. A “freeze frame” approach is not considered appropriate care in most situations (*Kosilek v. Massachusetts Department of Corrections/Maloney*, C.A. No. 92–12820-MLW, 2002). People with gender dysphoria who are deemed appropriate for hormone therapy (following the SOC) should be started on such therapy. The consequences of abrupt withdrawal of hormones or lack of initiation of hormone therapy when medically necessary include a high likelihood of negative outcomes such as surgical self-treatment by autocastration, depressed mood, dysphoria, and/or suicidality (Brown, 2010).

Reasonable accommodations to the institutional environment can be made in the delivery of care consistent with the SOC, if such accommodations do not jeopardize the delivery of medically necessary care to people with gender dysphoria. An example of a reasonable accommodation is the use of injectable hormones, if not medically contraindicated, in an environment where diversion of oral preparations is highly likely (Brown, 2009). Denial of needed changes in gender role or access to treatments, including sex reassignment surgery, on the basis of residence in an institution are not reasonable accommodations under the SOC (Brown, 2010).

Housing and shower/bathroom facilities for transsexual, transgender, and gender-nonconforming people living in institutions should take into account their gender identity and role, physical status, dignity, and personal safety. Placement in a single-sex housing unit, ward, or pod on the sole basis of the appearance of the external genitalia may not be appropriate and may place the individual at risk for victimization (Brown, 2009).

Institutions where transsexual, transgender, and gender-nonconforming people reside and receive health care should monitor for a tolerant and positive climate to ensure that residents are not under attack by staff or other residents.

XV

Applicability of the *Standards of Care* to People With Disorders of Sex Development

Terminology

The term *disorder of sex development* (DSD) refers to a somatic condition of atypical development of the reproductive tract (Hughes, Houk, Ahmed, Lee, & LWPES/ESPE Consensus Group, 2006). DSDs include the condition that used to be called *intersexuality*. Although the terminology was changed to DSD during an international consensus conference in 2005 (Hughes et al., 2006), disagreement about language use remains. Some people object strongly to the “disorder” label, preferring instead to view these congenital conditions as a matter of diversity (Diamond, 2009) and to continue using the terms *intersex* or *intersexuality*. In the SOC, WPATH uses the term DSD in an objective and value-free manner, with the goal of ensuring that health professionals recognize this medical term and use it to access relevant literature as the field progresses. WPATH remains

open to new terminology that will further illuminate the experience of members of this diverse population and lead to improvements in health care access and delivery.

Rationale for Addition to the SOC

Previously, individuals with a DSD who also met the *DSM-IV-TR*'s behavioral criteria for Gender Identity Disorder (American Psychiatric Association, 2000) were excluded from that general diagnosis. Instead, they were categorized as having a "Gender Identity Disorder - Not Otherwise Specified." They were also excluded from the *WPATH Standards of Care*.

The current proposal for *DSM-5* (www.dsm5.org) is to replace the term *gender identity disorder* with *gender dysphoria*. Moreover, the proposed changes to the *DSM* consider gender dysphoric people with a DSD to have a subtype of gender dysphoria. This proposed categorization—which explicitly differentiates between gender dysphoric individuals with and without a DSD—is justified: In people with a DSD, gender dysphoria differs in its phenomenological presentation, epidemiology, life trajectories, and etiology (Meyer-Bahlburg, 2009).

Adults with a DSD and gender dysphoria have increasingly come to the attention of health professionals. Accordingly, a brief discussion of their care is included in this version of the SOC.

Health History Considerations

Health professionals assisting patients with both a DSD and gender dysphoria need to be aware that the medical context in which such patients have grown up is typically very different from that of people without a DSD.

Some people are recognized as having a DSD through the observation of gender-atypical genitals at birth. (Increasingly this observation is made during the prenatal period by way of imaging procedures such as ultrasound.) These infants then undergo extensive medical diagnostic procedures. After consultation among the family and health professionals—during which the specific diagnosis, physical and hormonal findings, and feedback from long-term outcome studies (Cohen-Kettenis, 2005; Dessens, Slijper, & Drop, 2005; Jurgensen, Hiort, Holterhus, & Thyen, 2007; Mazur, 2005; Meyer-Bahlburg, 2005; Stikkelbroeck et al., 2003; Wisniewski, Migeon, Malouf, & Gearhart, 2004) are considered—the newborn is assigned a sex, either male or female.

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Other individuals with a DSD come to the attention of health professionals around the age of puberty through the observation of atypical development of secondary sex characteristics. This observation also leads to a specific medical evaluation.

The type of DSD and severity of the condition has significant implications for decisions about a patient's initial sex assignment, subsequent genital surgery, and other medical and psychosocial care (Meyer-Bahlburg, 2009). For instance, the degree of prenatal androgen exposure in individuals with a DSD has been correlated with the degree of masculinization of gender-related *behavior* (that is, *gender role and expression*); however, the correlation is only moderate, and considerable behavioral variability remains unaccounted for by prenatal androgen exposure (Jurgensen et al., 2007; Meyer-Bahlburg, Dolezal, Baker, Ehrhardt, & New, 2006). Notably, a similar correlation of prenatal hormone exposure with gender *identity* has not been demonstrated (e.g., Meyer-Bahlburg et al., 2004). This is underlined by the fact that people with the same (core) gender identity can vary widely in the degree of masculinization of their gender-related behavior.

Assessment and Treatment of Gender Dysphoria in People with Disorders of Sex Development

Very rarely are individuals with a DSD identified as having gender dysphoria *before* a DSD diagnosis has been made. Even so, a DSD diagnosis is typically apparent with an appropriate history and basic physical exam—both of which are part of a medical evaluation for the appropriateness of hormone therapy or surgical interventions for gender dysphoria. Mental health professionals should ask their clients presenting with gender dysphoria to have a physical exam, particularly if they are not currently seeing a primary care (or other health care) provider.

Most people with a DSD who are born with genital ambiguity do not develop gender dysphoria (e.g., Meyer-Bahlburg, Dolezal, et al., 2004; Wisniewski et al., 2004). However, some people with a DSD will develop chronic gender dysphoria and even undergo a change in their birth-assigned sex and/or their gender role (Meyer-Bahlburg, 2005; Wilson, 1999; Zucker, 1999). If there are persistent and strong indications that gender dysphoria is present, a comprehensive evaluation by clinicians skilled in the assessment and treatment of gender dysphoria is essential, irrespective of the patient's age. Detailed recommendations have been published for conducting such an assessment and for making treatment decisions to address gender dysphoria in the context of a DSD (Meyer-Bahlburg, 2011). Only after thorough assessment should steps be taken in the direction of changing a patient's birth-assigned sex or gender role.

Clinicians assisting these patients with treatment options to alleviate gender dysphoria may profit from the insights gained from providing care to patients without a DSD (Cohen-Kettenis, 2010).

However, certain criteria for treatment (e.g., age, duration of experience with living in the desired gender role) are usually not routinely applied to people with a DSD; rather, the criteria are interpreted in light of a patient's specific situation (Meyer-Bahlburg, 2011). In the context of a DSD, changes in birth-assigned sex and gender role have been made at any age between early elementary-school age and middle adulthood. Even genital surgery may be performed much earlier in these patients than in gender dysphoric individuals without a DSD if the surgery is well justified by the diagnosis, by the evidence-based gender-identity prognosis for the given syndrome and syndrome severity, and by the patient's wishes.

One reason for these treatment differences is that genital surgery in individuals with a DSD is quite common in infancy and adolescence. Infertility may already be present due to either early gonadal failure or to gonadectomy because of a malignancy risk. Even so, it is advisable for patients with a DSD to undergo a full social transition to another gender role only if there is a long-standing history of gender-atypical behavior, and if gender dysphoria and/or the desire to change one's gender role has been strong and persistent for a considerable period of time. Six months is the time period of full symptom expression required for the application of the gender dysphoria diagnosis proposed for *DSM-5* (Meyer-Bahlburg, 2011).

Additional Resources

The gender-relevant medical histories of people with a DSD are often complex. Their histories may include a great variety of inborn genetic, endocrine, and somatic atypicalities, as well as various hormonal, surgical, and other medical treatments. For this reason, many additional issues need to be considered in the psychosocial and medical care of such patients, regardless of the presence of gender dysphoria. Consideration of these issues is beyond what can be covered in the *SOC*. The interested reader is referred to existing publications (e.g., Cohen-Kettenis & Pfäfflin, 2003; Meyer-Bahlburg, 2002, 2008). Some families and patients also find it useful to consult or work with community support groups.

There is a very substantial medical literature on the medical management of patients with a DSD. Much of this literature has been produced by high-level specialists in pediatric endocrinology and urology, with input from specialized mental health professionals, especially in the area of gender. Recent international consensus conferences have addressed evidence-based care guidelines (including issues of gender and of genital surgery) for DSD in general (Hughes et al., 2006) and specifically for Congenital Adrenal Hyperplasia (Joint LWPES/ESPE CAH Working Group et al., 2002; Speiser et al., 2010). Others have addressed the research needs for DSD in general (Meyer-Bahlburg & Blizzard, 2004) and for selected syndromes such as 46,XXY (Simpson et al., 2003).



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APPENDIX A

GLOSSARY

Terminology in the area of health care for transsexual, transgender, and gender-nonconforming people is rapidly evolving; new terms are being introduced, and the definitions of existing terms are changing. Thus, there is often misunderstanding, debate, or disagreement about language in this field. Terms that may be unfamiliar or that have specific meanings in the SOC are defined below for the purpose of this document only. Others may adopt these definitions, but WPATH acknowledges that these terms may be defined differently in different cultures, communities, and contexts.

WPATH also acknowledges that many terms used in relation to this population are not ideal. For example, the terms *transsexual* and *transvestite*—and, some would argue, the more recent term *transgender*—have been applied to people in an objectifying fashion. Yet such terms have been more or less adopted by many people who are making their best effort to make themselves understood. By continuing to use these terms, WPATH intends only to ensure that concepts and processes are comprehensible, in order to facilitate the delivery of quality health care to transsexual, transgender, and gender-nonconforming people. WPATH remains open to new terminology that will further illuminate the experience of members of this diverse population and lead to improvements in health care access and delivery.

Bioidentical hormones: Hormones that are *structurally* identical to those found in the human body (ACOG Committee of Gynecologic Practice, 2005). The hormones used in bioidentical hormone therapy (BHT) are generally derived from plant sources and are structurally similar to endogenous human hormones, but they need to be commercially processed to become bioidentical.

Bioidentical compounded hormone therapy (BCHT): Use of hormones that are prepared, mixed, assembled, packaged, or labeled as a drug by a pharmacist and custom-made for a patient according to a physician's specifications. Government drug agency approval is not possible for each compounded product made for an individual consumer.

Cross-dressing (transvestism): Wearing clothing and adopting a gender role presentation that, in a given culture, is more typical of the other sex.

Disorders of sex development (DSD): Congenital conditions in which the development of chromosomal, gonadal, or anatomic sex is atypical. Some people strongly object to the “disorder” label and instead view these conditions as a matter of diversity (Diamond, 2009), preferring the terms *intersex* and *intersexuality*.

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Female-to-Male (FtM): Adjective to describe individuals assigned female at birth who are changing or who have changed their body and/or gender role from birth-assigned female to a more masculine body or role.

Gender dysphoria: 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).

Gender identity: A person's intrinsic sense of being male (a boy or a man), female (a girl or woman), or an alternative gender (e.g., boygirl, girlboy, transgender, genderqueer, eunuch) (Bockting, 1999; Stoller, 1964).

Gender identity disorder: Formal diagnosis set forth by the *Diagnostic Statistical Manual of Mental Disorders, 4th Edition, Text Rev (DSM IV-TR)* (American Psychiatric Association, 2000). Gender identity disorder is characterized by a strong and persistent cross-gender identification and a persistent discomfort with one's sex or sense of inappropriateness in the gender role of that sex, causing clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Gender-nonconforming: Adjective to describe individuals whose gender identity, role, or expression differs from what is normative for their assigned sex in a given culture and historical period.

Gender role or expression: Characteristics in personality, appearance, and behavior that in a given culture and historical period are designated as masculine or feminine (that is, more typical of the male or female social role) (Ruble, Martin, & Berenbaum, 2006). While most individuals present socially in clearly masculine or feminine gender roles, some people present in an alternative gender role such as genderqueer or specifically transgender. All people tend to incorporate both masculine and feminine characteristics in their gender expression in varying ways and to varying degrees (Bockting, 2008).

Genderqueer: Identity label that may be used by individuals whose gender identity and/or role does not conform to a binary understanding of gender as limited to the categories of man or woman, male or female (Bockting, 2008).

Internalized transphobia: Discomfort with one's own transgender feelings or identity as a result of internalizing society's normative gender expectations.

Male-to-Female (MtF): Adjective to describe individuals assigned male at birth who are changing or who have changed their body and/or gender role from birth-assigned male to a more feminine body or role.

Natural hormones: Hormones that are derived from natural *sources* such as plants or animals. Natural hormones may or may not be bioidentical.

Sex: Sex is assigned at birth as male or female, usually based on the appearance of the external genitalia. When the external genitalia are ambiguous, other components of sex (internal genitalia, chromosomal and hormonal sex) are considered in order to assign sex (Grumbach, Hughes, & Conte, 2003; MacLaughlin & Donahoe, 2004; Money & Ehrhardt, 1972; Vilain, 2000). For most people, gender identity and expression are consistent with their sex assigned at birth; for transsexual, transgender, and gender-nonconforming individuals, gender identity or expression differ from their sex assigned at birth.

Sex reassignment surgery (gender affirmation surgery): Surgery to change primary and/or secondary sex characteristics to affirm a person's gender identity. Sex reassignment surgery can be an important part of medically necessary treatment to alleviate gender dysphoria.

Transgender: Adjective to describe a diverse group of individuals who cross or transcend culturally defined categories of gender. The gender identity of transgender people differs to varying degrees from the sex they were assigned at birth (Bockting, 1999).

Transition: Period of time when individuals change from the gender role associated with their sex assigned at birth to a different gender role. For many people, this involves learning how to live socially in another gender role; for others this means finding a gender role and expression that are most comfortable for them. Transition may or may not include feminization or masculinization of the body through hormones or other medical procedures. The nature and duration of transition are variable and individualized.

Transsexual: Adjective (often applied by the medical profession) to describe individuals who seek to change or who have changed their primary and/or secondary sex characteristics through feminizing or masculinizing medical interventions (hormones and/or surgery), typically accompanied by a permanent change in gender role.

APPENDIX B

OVERVIEW OF MEDICAL RISKS OF HORMONE THERAPY

The risks outlined below are based on two comprehensive, evidence-based literature reviews of masculinizing/feminizing hormone therapy (Feldman & Safer, 2009; Hembree et al., 2009), along with a large cohort study (Asscheman et al., 2011). These reviews can serve as detailed references for providers, along with other widely recognized, published clinical materials (e.g., Dahl et al., 2006; Ettner et al., 2007).

Risks of Feminizing Hormone Therapy (MtF)

Likely Increased Risk:

Venous thromboembolic disease

- Estrogen use increases the risk of venous thromboembolic events (VTE), particularly in patients who are over age 40, smokers, highly sedentary, obese, and who have underlying thrombophilic disorders.
- This risk is increased with the additional use of third generation progestins.
- This risk is decreased with use of the transdermal (versus oral) route of estradiol administration, which is recommended for patients at higher risk of VTE.

Cardiovascular, cerebrovascular disease

- Estrogen use increases the risk of cardiovascular events in patients over age 50 with underlying cardiovascular risk factors. Additional progestin use may increase this risk.

Lipids

- Oral estrogen use may markedly increase triglycerides in patients, increasing the risk of pancreatitis and cardiovascular events.
- Different routes of administration will have different metabolic effects on levels of HDL cholesterol, LDL cholesterol and lipoprotein(a).
- In general, clinical evidence suggests that MtF patients with pre-existing lipid disorders may benefit from the use of transdermal rather than oral estrogen.

Liver/gallbladder

- Estrogen and cyproterone acetate use may be associated with transient liver enzyme elevations and, rarely, clinical hepatotoxicity.
- Estrogen use increases the risk of cholelithiasis (gall stones) and subsequent cholecystectomy.

Possible Increased Risk:

Type 2 diabetes mellitus

- Feminizing hormone therapy, particularly estrogen, may increase the risk of type 2 diabetes, particularly among patients with a family history of diabetes or other risk factors for this disease.

Hypertension

- Estrogen use may increase blood pressure, but the effect on incidence of overt hypertension is unknown.
- Spironolactone reduces blood pressure and is recommended for at-risk or hypertensive patients desiring feminization.

Prolactinoma

- Estrogen use increases the risk of hyperprolactinemia among MtF patients in the first year of treatment, but this risk is unlikely thereafter.
- High-dose estrogen use may promote the clinical appearance of preexisting but clinically unapparent prolactinoma.

Inconclusive or No Increased Risk:

Items in this category include those that may present risk, but for which the evidence is so minimal that no clear conclusion can be reached.

Breast cancer

- MtF persons who have taken feminizing hormones do experience breast cancer, but it is unknown how their degree of risk compares to that of persons born with female genitalia.
- Longer duration of feminizing hormone exposure (i.e., number of years taking estrogen preparations), family history of breast cancer, obesity (BMI >35), and the use of progestins likely influence the level of risk.

Other Side Effects of Feminizing Therapy:

The following effects may be considered minor or even desired, depending on the patient, but are clearly associated with feminizing hormone therapy.

Fertility and sexual function

- Feminizing hormone therapy may impair fertility.
- Feminizing hormone therapy may decrease libido.
- Feminizing hormone therapy reduces nocturnal erections, with variable impact on sexually stimulated erections.

Risks of Anti-Androgen Medications:

Feminizing hormone regimens often include a variety of agents that affect testosterone production or action. These include GnRH agonists, progestins (including cyproterone acetate), spironolactone, and 5-alpha reductase inhibitors. An extensive discussion of the specific risks of these agents is beyond the scope of the SOC. However, both spironolactone and cyproterone acetate are widely used and deserve some comment.

Cyproterone acetate is a progestational compound with anti-androgenic properties (Gooren, 2005; Levy et al., 2003). Although widely used in Europe, it is not approved for use in the United States because of concerns about hepatotoxicity (Thole, Manso, Salgueiro, Revuelta, & Hidalgo, 2004). Spironolactone is commonly used as an anti-androgen in feminizing hormone therapy, particularly in regions where cyproterone is not approved for use (Dahl et al., 2006; Moore et al., 2003; Tangpricha et al., 2003). Spironolactone has a long history of use in treating hypertension and congestive heart failure. Its common side effects include hyperkalemia, dizziness, and gastrointestinal symptoms (*Physicians' Desk Reference*, 2007).

Risks of Masculinizing Hormone Therapy (FtM)

Likely Increased Risk:

Polycythemia

- Masculinizing hormone therapy involving testosterone or other androgenic steroids increases the risk of polycythemia (hematocrit > 50%), particularly in patients with other risk factors.
- Transdermal administration and adaptation of dosage may reduce this risk.

Weight gain/visceral fat

- Masculinizing hormone therapy can result in modest weight gain, with an increase in visceral fat.

Possible Increased Risk:

Lipids

- Testosterone therapy decreases HDL, but variably affects LDL and triglycerides.
- Supraphysiologic (beyond normal male range) serum levels of testosterone, often found with extended intramuscular dosing, may worsen lipid profiles, whereas transdermal administration appears to be more lipid neutral.
- Patients with underlying polycystic ovarian syndrome or dyslipidemia may be at increased risk of worsening dyslipidemia with testosterone therapy.

Liver

- Transient elevations in liver enzymes may occur with testosterone therapy.
- Hepatic dysfunction and malignancies have been noted with oral methyltestosterone. However, methyltestosterone is no longer available in most countries and should no longer be used.

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Psychiatric

Masculinizing therapy involving testosterone or other androgenic steroids may increase the risk of hypomanic, manic, or psychotic symptoms in patients with underlying psychiatric disorders that include such symptoms. This adverse event appears to be associated with higher doses or supraphysiologic blood levels of testosterone.

Inconclusive or No Increased Risk:

Items in this category include those that may present risk, but for which the evidence is so minimal that no clear conclusion can be reached.

Osteoporosis

- Testosterone therapy maintains or increases bone mineral density among FtM patients prior to oophorectomy, at least in the first three years of treatment.
- There is an increased risk of bone density loss after oophorectomy, particularly if testosterone therapy is interrupted or insufficient. This includes patients utilizing solely oral testosterone.

Cardiovascular

- Masculinizing hormone therapy at normal physiologic doses does not appear to increase the risk of cardiovascular events among healthy patients.
- Masculinizing hormone therapy may increase the risk of cardiovascular disease in patients with underlying risks factors.

Hypertension

- Masculinizing hormone therapy at normal physiologic doses may increase blood pressure but does not appear to increase the risk of hypertension.
- Patients with risk factors for hypertension, such as weight gain, family history, or polycystic ovarian syndrome, may be at increased risk.

Type 2 diabetes mellitus

- Testosterone therapy does not appear to increase the risk of type 2 diabetes among FtM patients overall, unless other risk factors are present.
- Testosterone therapy may further increase the risk of type 2 diabetes in patients with other risk factors, such as significant weight gain, family history, and polycystic ovarian syndrome. There are no data that suggest or show an increase in risk in those with risk factors for dyslipidemia.

Breast cancer

- Testosterone therapy in FtM patients does not increase the risk of breast cancer.

Cervical cancer

- Testosterone therapy in FtM patients does not increase the risk of cervical cancer, although it may increase the risk of minimally abnormal Pap smears due to atrophic changes.

Ovarian cancer

- Analogous to persons born with female genitalia with elevated androgen levels, testosterone therapy in FtM patients may increase the risk of ovarian cancer, although evidence is limited.

Endometrial (uterine) cancer

- Testosterone therapy in FtM patients may increase the risk of endometrial cancer, although evidence is limited.

Other Side Effects of Masculinizing Therapy:

The following effects may be considered minor or even desired, depending on the patient, but are clearly associated with masculinization.

Fertility and sexual function

- Testosterone therapy in FtM patients reduces fertility, although the degree and reversibility are unknown.

- Testosterone therapy can induce permanent anatomic changes in the developing embryo or fetus.
- Testosterone therapy induces clitoral enlargement and increases libido.

Acne, androgenic alopecia

Acne and varying degrees of male pattern hair loss (androgenic alopecia) are common side effects of masculinizing hormone therapy.

APPENDIX C

SUMMARY OF CRITERIA FOR HORMONE THERAPY AND SURGERIES

As for all previous versions of the *SOC*, the criteria put forth in the *SOC* for hormone therapy and surgical treatments for gender dysphoria are clinical guidelines; individual health professionals and programs may modify them. Clinical departures from the *SOC* may come about because of a patient's unique anatomic, social, or psychological situation; an experienced health professional's evolving method of handling a common situation; a research protocol; lack of resources in various parts of the world; or the need for specific harm-reduction strategies. These departures should be recognized as such, explained to the patient, and documented through informed consent for quality patient care and legal protection. This documentation is also valuable to accumulate new data, which can be retrospectively examined to allow for health care—and the *SOC*—to evolve.

Criteria for Feminizing/Masculinizing Hormone Therapy (One Referral or Chart Documentation of Psychosocial Assessment)

1. Persistent, well-documented gender dysphoria;
2. Capacity to make a fully informed decision and to give consent for treatment;
3. Age of majority in a given country (if younger, follow the *SOC* for children and adolescents);
4. If significant medical or mental concerns are present, they must be reasonably well controlled.

Criteria for Breast/Chest Surgery (One Referral)

Mastectomy and Creation of a Male Chest in FtM Patients:

1. Persistent, well-documented gender dysphoria;
2. Capacity to make a fully informed decision and to give consent for treatment;
3. Age of majority in a given country (if younger, follow the SOC for children and adolescents);
4. If significant medical or mental health concerns are present, they must be reasonably well controlled.

Hormone therapy is not a prerequisite.

Breast Augmentation (Implants/Lipofilling) in MtF Patients:

1. Persistent, well-documented gender dysphoria;
2. Capacity to make a fully informed decision and to give consent for treatment;
3. Age of majority in a given country (if younger, follow the SOC for children and adolescents);
4. If significant medical or mental health concerns are present, they must be reasonably well controlled.

Although not an explicit criterion, it is recommended that MtF patients undergo feminizing hormone therapy (minimum 12 months) prior to breast augmentation surgery. The purpose is to maximize breast growth in order to obtain better surgical (aesthetic) results.

Criteria for Genital Surgery (Two Referrals)

Hysterectomy and Salpingo-Oophorectomy in FtM Patients and Orchiectomy in MtF Patients:

1. Persistent, well documented gender dysphoria;
2. Capacity to make a fully informed decision and to give consent for treatment;

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3. Age of majority in a given country;
4. If significant medical or mental health concerns are present, they must be well controlled;
5. 12 continuous months of hormone therapy as appropriate to the patient's gender goals (unless hormones are not clinically indicated for the individual).

The aim of hormone therapy prior to gonadectomy is primarily to introduce a period of reversible estrogen or testosterone suppression, before a patient undergoes irreversible surgical intervention.

These criteria do not apply to patients who are having these surgical procedures for medical indications other than gender dysphoria.

Metoidioplasty or Phalloplasty in FtM Patients and Vaginoplasty in MtF Patients:

1. Persistent, well documented gender dysphoria;
2. Capacity to make a fully informed decision and to give consent for treatment;
3. Age of majority in a given country;
4. If significant medical or mental health concerns are present, they must be well controlled;
5. 12 continuous months of hormone therapy as appropriate to the patient's gender goals (unless hormones are not clinically indicated for the individual);
6. 12 continuous months of living in a gender role that is congruent with their gender identity.

Although not an explicit criterion, it is recommended that these patients also have regular visits with a mental health or other medical professional.

The criterion noted above for some types of genital surgeries—that is, that patients engage in 12 continuous months of living in a gender role that is congruent with their gender identity—is based on expert clinical consensus that this experience provides ample opportunity for patients to experience and socially adjust in their desired gender role, before undergoing irreversible surgery.

APPENDIX D

EVIDENCE FOR CLINICAL OUTCOMES OF THERAPEUTIC APPROACHES

One of the real supports for any new therapy is an outcome analysis. Because of the controversial nature of sex reassignment surgery, this type of analysis has been very important. Almost all of the outcome studies in this area have been retrospective.

One of the first studies to examine the post-treatment psychosocial outcomes of transsexual patients was done in 1979 at Johns Hopkins University School of Medicine and Hospital (USA) (J. K. Meyer & Reter, 1979). This study focused on patients' occupational, educational, marital, and domiciliary stability. The results revealed several significant changes with treatment. These changes were not seen as positive; rather, they showed that many individuals who had entered the treatment program were no better off or were worse off in many measures after participation in the program. These findings resulted in closure of the treatment program at that hospital/medical school (Abramowitz, 1986).

Subsequently, a significant number of health professionals called for a standard for eligibility for sex reassignment surgery. This led to the formulation of the original *Standards of Care* of the Harry Benjamin International Gender Dysphoria Association (now WPATH) in 1979.

In 1981, Pauly published results from a large retrospective study of people who had undergone sex reassignment surgery. Participants in that study had much better outcomes: Among 83 FtM patients, 80.7% had a satisfactory outcome (i.e., patient self report of "improved social and emotional adjustment"), 6.0% unsatisfactory. Among 283 MtF patients, 71.4% had a satisfactory outcome, 8.1% unsatisfactory. This study included patients who were treated before the publication and use of the *Standards of Care*.

Since the *Standards of Care* have been in place, there has been a steady increase in patient satisfaction and decrease in dissatisfaction with the outcome of sex reassignment surgery. Studies conducted after 1996 focused on patients who were treated according to the *Standards of Care*. The findings of Rehman and colleagues (1999) and Krege and colleagues (2001) are typical of this body of work; none of the patients in these studies regretted having had surgery, and most reported being satisfied with the cosmetic and functional results of the surgery. Even patients who develop severe surgical complications seldom regret having undergone surgery. Quality of surgical results is one of the best predictors of the overall outcome of sex reassignment (Lawrence, 2003). The vast majority of follow-up studies have shown an undeniable beneficial effect of sex reassignment surgery on postoperative outcomes such as subjective well being, cosmesis, and sexual function (De Cuypere et al., 2005; Garaffa, Christopher, & Ralph, 2010; Klein & Gorzalka, 2009), although the specific magnitude of benefit is uncertain from

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the currently available evidence. One study (Emory, Cole, Avery, Meyer, & Meyer, 2003) even showed improvement in patient income.

One troubling report (Newfield et al., 2006) documented lower scores on quality of life (measured with the SF-36) for FtM patients than for the general population. A weakness of that study is that it recruited its 384 participants by a general email rather than a systematic approach, and the degree and type of treatment were not recorded. Study participants who were taking testosterone had typically been doing so for less than 5 years. Reported quality of life was higher for patients who had undergone breast/chest surgery than for those who had not ($p < .001$). (A similar analysis was not done for genital surgery.) In other work, Kuhn and colleagues (2009) used the King's Health Questionnaire to assess the quality of life of 55 transsexual patients at 15 years after surgery. Scores were compared to those of 20 healthy female control patients who had undergone abdominal/pelvic surgery in the past. Quality of life scores for transsexual patients were the same or better than those of control patients for some subscales (emotions, sleep, incontinence, symptom severity, and role limitation), but worse in other domains (general health, physical limitation, and personal limitation).

Two long-term observational studies, both retrospective, compared the mortality and psychiatric morbidity of transsexual adults to those of general population samples (Asscheman et al., 2011; Dhejne et al., 2011). An analysis of data from the Swedish National Board of Health and Welfare information registry found that individuals who had received sex reassignment surgery (191 MtF and 133 FtM) had significantly higher rates of mortality, suicide, suicidal behavior, and psychiatric morbidity than those for a nontranssexual control group matched on age, immigrant status, prior psychiatric morbidity, and birth sex (Dhejne et al., 2011). Similarly, a study in the Netherlands reported a higher total mortality rate, including incidence of suicide, in both pre- and post-surgery transsexual patients (966 MtF and 365 FtM) than in the general population of that country (Asscheman et al., 2011). Neither of these studies questioned the efficacy of sex reassignment; indeed, both lacked an adequate comparison group of transsexuals who either did not receive treatment or who received treatment other than genital surgery. Moreover, transsexual people in these studies were treated as far back as the 1970s. However, these findings do emphasize the need to have good long-term psychological and psychiatric care available for this population. More studies are needed that focus on the outcomes of current assessment and treatment approaches for gender dysphoria.

It is difficult to determine the effectiveness of hormones alone in the relief of gender dysphoria. Most studies evaluating the effectiveness of masculinizing/feminizing hormone therapy on gender dysphoria have been conducted with patients who have also undergone sex reassignment surgery. Favorable effects of therapies that included both hormones and surgery were reported in a comprehensive review of over 3000 patients in 79 studies (mostly observational) conducted between 1961 and 1991 (Eldh, Berg, & Gustafsson, 1997; Gijs & Brewaeys, 2007; Murad et al., 2010; Pfäfflin & Junge, 1998). Patients operated on after 1986 did better than those before 1986; this reflects significant improvement in surgical complications (Eldh et al., 1997). Most patients have reported improved psychosocial outcomes, ranging between 87% for MtF patients and 97% for FtM patients (Green & Fleming, 1990).

Similar improvements were found in a Swedish study in which “almost all patients were satisfied with sex reassignment at 5 years, and 86% were assessed by clinicians at follow-up as stable or improved in global functioning” (Johansson, Sundbom, Höjerback, & Bodlund, 2010). Weaknesses of these earlier studies are their retrospective design and use of different criteria to evaluate outcomes.

A prospective study conducted in the Netherlands evaluated 325 consecutive adult and adolescent subjects seeking sex reassignment (Smith, Van Goozen, Kuiper, & Cohen-Kettenis, 2005). Patients who underwent sex reassignment therapy (both hormonal and surgical intervention) showed improvements in their mean gender dysphoria scores, measured by the Utrecht Gender Dysphoria Scale. Scores for body dissatisfaction and psychological function also improved in most categories. Fewer than 2% of patients expressed regret after therapy. This is the largest prospective study to affirm the results from retrospective studies that a combination of hormone therapy and surgery improves gender dysphoria and other areas of psychosocial functioning. There is a need for further research on the effects of hormone therapy without surgery, and without the goal of maximum physical feminization or masculinization.

Overall, studies have been reporting a steady improvement in outcomes as the field becomes more advanced. Outcome research has mainly focused on the outcome of sex reassignment surgery. In current practice there is a range of identity, role, and physical adaptations that could use additional follow-up or outcome research (Institute of Medicine, 2011).

APPENDIX E

DEVELOPMENT PROCESS FOR THE STANDARDS OF CARE, VERSION 7

The process of developing *Standards of Care, Version 7* began when an initial SOC “work group” was established in 2006. Members were invited to examine specific sections of SOC, *Version 6*. For each section, they were asked to review the relevant literature, identify where research was lacking and needed, and recommend potential revisions to the SOC as warranted by new evidence. Invited papers were submitted by the following authors: Aaron Devor, Walter Bockting, George Brown, Michael Brownstein, Peggy Cohen-Kettenis, Griet DeCuypere, Petra DeSutter, Jamie Feldman, Lin Fraser, Arlene Istar Lev, Stephen Levine, Walter Meyer, Heino Meyer-Bahlburg, Stan Monstrey, Loren Schechter, Mick van Trotsenburg, Sam Winter, and Ken Zucker. Some of these authors chose to add co-authors to assist them in their task.

Initial drafts of these papers were due June 1, 2007. Most were completed by September 2007, with the rest completed by the end of 2007. These manuscripts were then submitted to the *International*

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Journal of Transgenderism (JIT). Each underwent the regular *JIT* peer review process. The final papers were published in Volume 11 (1–4) in 2009, making them available for discussion and debate.

After these articles were published, an SOC Revision Committee was established by the WPATH Board of Directors in 2010. The Revision Committee was first charged with debating and discussing the *JIT* background papers through a Google website. A subgroup of the Revision Committee was appointed by the Board of Directors to serve as the Writing Group. This group was charged with preparing the first draft of SOC, *Version 7* and continuing to work on revisions for consideration by the broader Revision Committee. The Board also appointed an International Advisory Group of transsexual, transgender, and gender-nonconforming individuals to give input on the revision.

A technical writer was hired to (1) review all of the recommendations for revision—both the original recommendations as outlined in the *JIT* articles and additional recommendations that emanated from the online discussion—and (2) create a survey to solicit further input on these potential revisions. From the survey results, the Writing Group was able to discern where these experts stood in terms of areas of agreement and areas in need of more discussion and debate. The technical writer then (3) created a very rough first draft of SOC, *Version 7* for the Writing Group to consider and build on.

The Writing Group met on March 4 and 5, 2011 in a face-to-face expert consultation meeting. They reviewed all recommended changes and debated and came to consensus on various controversial areas. Decisions were made based on the best available science and expert consensus. These decisions were incorporated into the draft, and additional sections were written by the Writing Group with the assistance of the technical writer.

The draft that emerged from the consultation meeting was then circulated among the Writing Group and finalized with the help of the technical writer. Once this initial draft was finalized, it was circulated among the broader SOC Revision Committee and the International Advisory Group. Discussion was opened up on the Google website and a conference call was held to resolve issues. Feedback from these groups was considered by the Writing Group, who then made further revisions. Two additional drafts were created and posted on the Google website for consideration by the broader SOC Revision Committee and the International Advisory Group. Upon completion of these three iterations of review and revision, the final document was presented to the WPATH Board of Directors for approval. The Board of Directors approved this version on September 14, 2011.

Funding

The *Standards of Care* revision process was made possible through a generous grant from the Tawani Foundation and a gift from an anonymous donor. These funds supported the following:

1. Costs of a professional technical writer;
2. Process of soliciting international input on proposed changes from gender identity professionals and the transgender community;
3. Working meeting of the Writing Group;
4. Process of gathering additional feedback and arriving at final expert consensus from the professional and transgender communities, the *Standards of Care, Version 7*, Revision Committee, and WPATH Board of Directors;
5. Costs of printing and distributing *Standards of Care, Version 7*, and posting a free downloadable copy on the WPATH website;
6. Plenary session to launch the *Standards of Care, Version 7*, at the 2011 WPATH Biennial Symposium in Atlanta, Georgia, USA.

Members of the *Standards of Care* Revision Committee[†]

Eli Coleman, PhD (USA)* - Committee chair

Richard Adler, PhD (USA)

Walter Bockting, PhD (USA)*

Marsha Botzer, MA (USA)*

George Brown, MD (USA)

Peggy Cohen-Kettenis, PhD (Netherlands)*

Griet DeCuypere, MD (Belgium)*

Aaron Devor, PhD (Canada)

Randall Ehrbar, PsyD (USA)

Randi Ettner, PhD (USA)

Evan Eyler, MD (USA)

Jamie Feldman, MD, PhD (USA)*

Lin Fraser, EdD (USA)*

Rob Garofalo, MD, MPH (USA)

Jamison Green, PhD, MFA (USA)*

Dan Karasic, MD (USA)

Gail Knudson, MD (Canada)*

Arlene Istar Lev, LCSW-R (USA)

Gal Mayer, MD (USA)

Walter Meyer, MD (USA)*

Heino Meyer-Bahlburg, Dr. rer.nat. (USA)

Stan Monstrey, MD, PhD (Belgium)*

Blaine Paxton Hall, MHS-CL, PA-C (USA)

Friedmann Pfäfflin, MD, PhD (Germany)

Katherine Rachlin, PhD (USA)

Bean Robinson, PhD (USA)

Loren Schechter, MD (USA)

Vin Tangpricha, MD, PhD (USA)

Mick van Trotsenburg, MD (Netherlands)

Anne Vitale, PhD (USA)

Sam Winter, PhD (Hong Kong)

Stephen Whittle, OBE (UK)

Kevan Wylie, MB, MD (UK)

Ken Zucker, PhD (Canada)

* Writing Group member.

† All members of the *Standards of Care, Version 7* Revision Committee donated their time to work on this revision.

International Advisory Group Selection Committee

Walter Bockting, PhD (USA)

Marsha Botzer, MA (USA)

Aaron Devor, PhD (Canada)

Randall Ehrbar, PsyD (USA)

Evan Eyler, MD (USA)

Jamison Green, PhD, MFA (USA)

Blaine Paxton Hall, MHS-CL, PA-C (USA)

International Advisory Group

Tamara Adrian, LGBT Rights Venezuela (Venezuela)

Craig Andrews, FtM Australia (Australia)

Christine Burns, MBE, Plain Sense Ltd (UK)

Naomi Fontanos, Society for Transsexual Women's Rights in the Phillipines (Phillipines)

Tone Marie Hansen, Harry Benjamin Resource Center (Norway)

Rupert Raj, Sherbourne Health Center (Canada)

Masae Torai, FtM Japan (Japan)

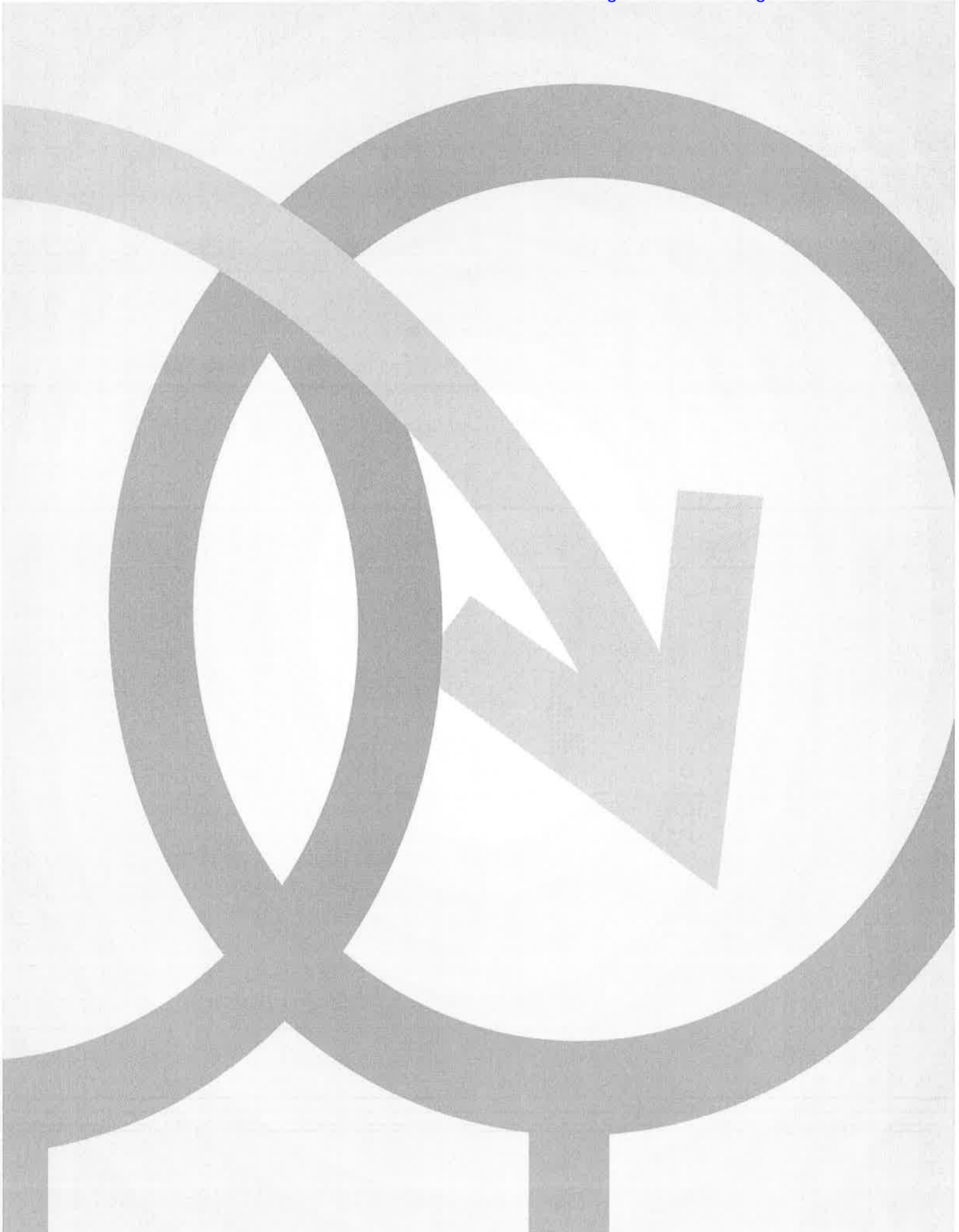
Kelley Winters, GID Reform Advocates (USA)

Technical Writer

Anne Marie Weber-Main, PhD (USA)

Editorial Assistance

Heidi Fall (USA)





Male Psychosexual Inversion: Transsexualism

A Review of 100 Cases

IRA B. PAULY, MD, PORTLAND, ORE

Introduction

THIS paper is a clinical review of a dramatic psychiatric syndrome, characterized by the male's intense desire for sexual transformation by surgical and/or hormonal means, based upon his complete identification with the feminine gender role. The transsexual represents an extreme manifestation of psychosexual inversion, wherein the individual attempts to deny and reverse his biological sex, and pass into and maintain the opposite gender role identification.⁹¹ These biological males identify with the feminine role to such an extent that they attempt to share feminine interests, attitudes, behavior, dress, sexual object choice, and desperately strive to approximate the female anatomical structure. This latter aim becomes the single theme of the transsexual's life, and requires the cooperation of the physician. The syndrome is of interest to the surgeon (urologist and gynecologist) and internist (endocrinologist), as well as the psychiatrist, for it is to the first of these that the patient comes in hopes of obtaining an operation for the change of sex or female hormones. In an ironic sense this syndrome may be considered iatrogenic, in that advances in surgical technique and hormone therapy now permit the partial realization of fantasies of sexual metamorphosis. The operation includes castration, penectomy, and plastic construction of an artificial vagina. Not all three steps are invariably taken for a variety of reasons. The decision to operate is an extremely complex and controversial one, and is frequently prompted by an attempt at suicide or self-mutilation. The justification for surgical intervention has been challenged vigorously for many reasons, not all of which have been scien-

tifically based. An opportunity is now provided to review the clinical material of 100 case reports of male transsexualism collected from the medical literature. These data taken from some 54 primary authors are compared with information from four large series of cases of male transsexualism.^{10,53,77,79,84,85} It is the purpose of this paper to present the clinical manifestations of transsexualism and clarify the biological and psychological data.

Historical Review

The concept of psychosexual inversion and its specific forms of expression have been known since antiquity, and have appeared in the classic literature from Heroditus to Shakespeare, until the present time. Well-known historical examples of psychosexual inversion span time from the Roman Emperor Caligula⁶⁹ to the famous French diplomat Chevalier d'Eon,⁶⁹ and currently Hamburger's famous case⁵² has become the prototype of the most extreme manifestation of this syndrome. The first mention of this problem in the medical literature was in 1830 by the German author Friedreich⁴³ who discussed the fixed delusion of being a woman, and mentioned that this "is not a very rare mental disorder and has been observed almost everywhere." Esquirol,^{31,39} in 1838 in the French literature, briefly mentioned two cases of transvestism. Westphal⁹⁹ wrote about the contrary sexual feeling, and is credited with the first complete description of a case of transvestism. Krafft-Ebing^{63,64} described numerous cases of confused psychosexual identification, manifest by ideas of sexual metamorphosis, which he felt represented a form of paranoid psychosis, using the term "metamorphosis sexualis paranoia." De Montyel³¹ described *La Maladie des Scythes*, referring to a form of psychosexual inversion, the cause of which was attributed to excessive horseback riding. He was among the first to specify an organic etiology. Freud⁴² used the term inversion, referring primarily to the reversal of sexual object choice or homosexuality. Magnus Hirschfeld⁵⁶ coined

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From the University of Oregon Medical School, Department of Psychiatry, Assistant Professor.

Reprint requests to 3181 SW Sam Jackson Park Rd, Portland, Ore 97201.

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the term transvestism, but indicated that this referred only to the most obvious aspect of the disorder. Havelock Ellis³⁸ used the terms sex-esthetic inversion and later eonism, stressing different aspects of the disorder. Marcuse⁶⁸ was the first to elaborate that aspect of psychosexual inversion which aims at physical sexual metamorphosis or change of sex. Abraham¹ reported upon the first cases to be operated, and Binder¹¹ continued the German tradition of major contribution in this field by writing a comprehensive description of this syndrome and compiling an extensive bibliography. Masson⁶⁹ has written the classic monograph on transvestism in the French literature. D. O. Cauldwell²⁷⁻²⁹ first used the term transsexualism, stressing the sociopathic features by calling the syndrome *Psychopathia Transsexualis*. However, it was not until Christian Hamburger⁵² reported his case that this disorder became well known. This case was given sensational attention in the world press, and despite controversial opinion regarding his report,^{76,100} Dr. Hamburger must be credited for bringing this syndrome to the attention of the lay public as well as the medical profession. Finally, Dr. Harry Benjamin⁷⁻¹⁰ has contributed significantly to this field since 1953, and has more clinical experience with cases of transsexualism than any other single individual.

Data

One hundred cases of male transsexualism have been collected from the medical literature. This material is summarized in Table 1. These cases are reported by 54 primary authors in seven languages (German, 33%; English, 33%; French, 22%; others, 12%), from 13 countries (Germany, 24%; United States, 20%; France, 17%; Switzerland, 11%; and others, 28%). An attempt was made to obtain information in the following categories: age, occupation, civil status, surgery, postoperative evaluation, hormone therapy, psychotherapy, psychopathology, sexual behavior, family background, physical examination, and biological data. Because the quality of the reports was not uniform it was impossible to obtain statistical information on all of the above items. Where stated, percentages represent a minimal estimate, for only positive findings are tabulated. The results and interpretations of these data will follow.

Etiology

The evidence collected from this series of 100 male transsexuals has not substantiated claims of genetic or organic etiology.^{8,47,52} Money and the Hampsons^{54,70,71} have outlined five biological variables of sexual behavior (gonadal, hormonal, chromosomal, and internal and external anatomical), and two psychosocial variables (sex of assignment and rearing, and gender role). In the normal individual all seven of these variables are congruent, but the male transsexual rejects the masculine gender role despite male biological determinants, and apparent assignment and rearing in the masculine role. Although the biological variables are generally within normal limits in this series, there are some exceptions. Benjamin¹⁰ reports that 30% of his patients showed some degree of sexual underdevelopment, although none were actually eunuchoid. In this series only five cases were reported to show gonadal underdevelopment, whereas 62 were normal on physical examination. Of 43 transsexuals who had married, 24 (56%) had children. The 17-ketosteroid values of the male transsexuals in this series were within normal limits, where this information was reported (25%). However, the fact that androgen levels are normal in the adult does not rule out the possibility that this syndrome could result from a very early pre- or postnatal hormonal imbalance. Recent evidence from infra-human species¹⁰⁴ strongly suggests an early period of maximal susceptibility to the influence of hormones on gender role identity subsequently developed. This period of organization and development is prenatal in the guinea pig and monkey, and postnatal in the rat. Androgen levels in this early period act according to principles which appear identical with those operative during the differentiation of the genital tracts, but which effect the establishment of the masculinity or femininity of an individual independently of the reproductive organs. These observations in animals are consistent with the following clinical findings in man: observations of gender role inversion in children below the age of 3^{48,49}; early age of onset reported by transsexuals and their families; the concept of imprinting and the early ineradicability of gender role preference⁷¹; Stoller's⁹² theory of the early and irreversible establishment of core

TABLE 1.—Cases of Male Transsexualism

Case No.	Date	Reference Number(s)	Country	Language	Case Description
1	1916	68	Germany	German	Excellent
2, 3	1931	1	Germany	German	Fair
4	1932	82	Czech	French	Minimal
5, 6, 7	1933	11	Germany	German	Excellent
8	1939	41	France	French	Good
9	1944	103	Switzerland	German	Good
10	1944	74	US	English	Excellent
11, 12, 13	1947	4(32, 36)	Switzerland	French	Excellent
14	1948	51	US	English	Fair
15	1949	58	Germany	German	Good
16	1950	15	Germany	German	Excellent
17, 18, 19	1950	28, 29	US	English	Fair
20	1951	36	Switzerland	German	Fair
21-26	1952	6, 45(32)	Switzerland	German	Excellent
27, 28	1952	88	Austria	German	Fair
29	1953	52 (10)	Denmark	English	Excellent
30, 31, 32	1953	25	Germany	German	Excellent
33	1954	101	US	English	Excellent
34	1955	77	Germany	German	Fair
35	1955	35	France	French	Excellent
36	1955	62	France	French	Excellent
37	1956	30	France	French	Excellent
38, 39, 40	1956	3	Norway	Norwegian	Fair
41, 42	1956	94	Denmark	Danish	Minimal
43	1956	40	Denmark	English	Good
44, 45	1956	98	France	French	Excellent
46, 47, 48	1957	16 (18)	US	English	Good
49	1957	95	Germany	German	Excellent
50	1957	96	Italy	Italian	Excellent
51, 52, 53	1958	81	Germany	German	Excellent
54	1958	32	England	English	Good
55	1959	75	Denmark	Danish	Excellent
56	1959	44	Germany	German	Good
57	1959	73 (18)	US	English	Excellent
58, 59	1959	19	France	French	Minimal
60	1960	60	England	English	Fair
61	1960	37	Netherlands	Dutch	Excellent
62	1960	50 (20)	US	English	Excellent
63	1960	87	Switzerland	German	Excellent
64, 65, 66	1960	59	France	French	Excellent
67	1960	57	Germany	German	Excellent
68	1961	20	Norway	Norwegian	Minimal
69	1961	61	France	French	Excellent
70, 71, 72	1961	12	Germany	German	Excellent
73, 74	1961	55	Sweden	English	Excellent
75-78	1961	23	Germany	German	Excellent
79-82	1962	97	France	French	Fair
83	1962	90	Switzerland	French	Excellent
84, 85, 86	1963	34	South Africa	English	Excellent
87	1963	13	US	English	Excellent
88	1964	9	US	English	Excellent
89, 90	1964	86	England	English	Fair
91-95	1964	72	US	English	Minimal
96-100	1965	80	US	English	Excellent

gender identity, which is the result of a biological force sometimes powerful enough to contradict one's anatomy and environmental upbringing; and Benjamin's¹⁰ theory that an abnormal constitution must first be present, before wrong conditioning might subsequently act as a trigger. The sex chromatin pattern was negative or male in 24 cases where this information was available in this series, and is con-

sistent with a large body of information^{5,14,54,78,79,83} indicating that the genetic sex in gender role inversion is consistent with the other biological variables. There was one exception out of 100 cases in this series, in which there was the coexistence of Klinefelter's syndrome and transsexualism.⁷² This coincidence led Money and Pollitt to speculate, as others had done before them,^{17,47} that there might be a genotypic abnormality in cases of psychosexual or gender role inversion. Despite the fact that they collected six such cases from the literature, in which Klinefelter's syndrome and transvestism were coexistent, this coincidence did not reach statistical significance in their series, and represents but 1 case in 100 in this series of male transsexuals. Anchersen³ reported one example of concordance for transsexualism in monozygotic twins.

The evidence from human hermaphrodites^{54,70,71} indicates that individuals accept the role to which they are assigned and reared, even when this is contrary to one or more of the biological variables. These investigators felt that the sex of an hermaphroditic child should not be changed after the age of 2 or 3. Recent studies^{33,93} indicate that the sex of persons with confused or ambiguous external genitalia have been successfully changed at a much later age. These divergent views are bridged by the concept of an hermaphroditic gender identity in some hermaphrodites,⁹³ which permits a change of apparent gender identity only because the core gender identity had never been well established in the first place. Thus, it becomes critical to determine whether or not the core gender identity has become established. In 13 cases in this series, and less than 20% of the cases in Benjamin's^{9,10} series, it is probable that the transsexual was encouraged to identify with the feminine gender role. It should not always be assumed that the sex of assignment and rearing are invariably the same, particularly if one considers the nonverbal cues. It is possible to designate a child as being male with reference to his anatomy and assignment of name, but subtly or in some cases, rather openly, encourage him to identify with the feminine role.^{48,49} Male transsexuals appear to reject the masculine role, and the majority (87% in this series) do so in strong opposition to the wishes of parents

and society in general. The psychological and sociological factors involved with early learning and the child-parent relationship appear very significant in the determination of gender role preference. Gender identity or psychosexual identity, whether normal or deviant, is established within the first few years of life. There is some evidence^{71,92,104} to suggest that biological factors, unproven in man, are prerequisite in setting the stage for the operation of psychosocial determinants in the establishment of gender role.

Psychopathology

The intrafamily dynamics are varied, and there is no common pattern which allows one to generalize. In at least 19 cases, the father is seen as a feared object, often alcoholic, inconsistent, and even brutal. Psychosexual inversion is well established in childhood with preference for the role of the little girl.^{48,49} This frequently leads to rejection by peers, and consequent isolation and unhappiness. It should be stated that the transsexual is usually an unreliable historian, frequently unable to recall very well, or inclined to distort.^{30,79,91,102} The story he gives requires careful evaluation and interpretation, and speculations should be made with caution. Despite his selective recall and tendency to distort, there is a striking similarity in the material offered by transsexuals. The rejection of the masculine role has numerous expressions, from aversion to boys' activities and games to overt acceptance of the feminine role, including transvestism. Cross-dressing is frequently seen in the pre-school age, and results in further rejection by male peers. The teasing and humiliation suffered lead to withdrawal, isolation, and further rejection of the masculine role, setting up a vicious cycle. Through the latency period and adolescence this pattern becomes fixed, and only through fantasies of being female does the invert find escape from the painful reality of his life. Because of his isolation, he has not developed interpersonal skills and frequently (26%) presents the picture of a schizoid or inadequate personality. In adolescence and early adulthood, psychopathic acting out is common (30%), and he comes into trouble with society. Overt homosexuality frequently begins at this time, and the majority of transsexuals report a preference for the male sexual partner. In this series, 39%

report overt sexual activity with men, who the transsexual insists are nonhomosexual, normal men. Of these patients, 57% remained single, and of the remaining 43% who married, approximately 50% subsequently divorced. Male transsexuals report that they abhor homosexuality, condemn this practice in others, and strongly deny that their own sexual activity is homosexual. Many male transsexuals, believing they are women, consider it appropriate to select a man as a sexual partner, and react to a female partner with the same revulsion that a non-homosexual man would feel toward a male sexual partner. Brown,^{21,22} has distinguished between inverted and noninverted homosexuality. The homosexuality in transsexualism is thought to be a secondary phenomenon, which is but another manifestation of the well-established primary gender role inversion. On the other hand, there is a small percentage who appear to seek the operation as a means of rationalizing their homosexuality, in which case the term pseudotranssexual might be considered. The sexual drive or libido is often weak, and the gratification comes primarily from being allowed to play the passive, feminine role. Benjamin^{7,8} has pointed out that the transsexual abhors his genitalia, attempts to hide or remove them through surgery or even selfmutilation. Clearly, this distinguishes the transsexual from the more usual variety of homosexual, who takes great pleasure from his genitalia, and would never consider their removal. It should be emphasized that it is the feminine role which is sought, in its most broad sense. To interpret transsexualism *simply* in terms of homosexuality⁸⁹ neglects much of the evidence, and exaggerates the sexual aim, which in fact is a secondary feature. Finally, one might go further and interpret transsexualism as an escape from genital sexuality.^{79,102} The primary goal, the removal of the genital organs, certainly precludes this possibility.

The transsexual becomes fixed and rigid in his role. Once he knows that surgery is possible, this aim becomes the most important single goal of his life. The publicity given successful transsexuals is frequently the precipitating event in the transition from transvestism to transsexualism. This point is clearly demonstrated by the events which followed the public-

ity given Dr. Hamburger's case. Within a year, 465 men and women had written to Dr. Hamburger⁵³ desperately requesting the same operation. Certainly, psychosexual inversion represents a spectrum, with transsexualism representing the extreme pole. Homosexuality and transvestism are usually associated with transsexualism, but refer specifically to sexual object preference and cross-dressing respectively, and in themselves may or may not represent more limited aspects of psychosexual inversion. On the other hand, some transsexuals rarely cross-dress until after a conversion operation, and most transvestites and homosexuals do not request surgery. As time goes on, there is increasing encapsulation, and the transsexual often becomes convinced that he is really a woman. Monthly cramps and rectal bleeding are reported and he interprets this as menstruation.^{6,23,74,77,90} Shrinkage of the sexual organs, enlargement of the breasts, skin and hair changes are commonly reported. These may take on the quality of somatic delusions, and he becomes convinced that some metamorphosis is taking place. What appears to be the result of wishful thinking is often caused by estrogens, which some patients have taken but may not have mentioned. Many transsexuals present themselves as pseudohermaphrodites,⁷⁷ hoping they can substantiate a biological basis for their condition, and thus obtain the change of sex operation. In its most extreme form, this syndrome may sometimes represent an unusual paranoid state,²⁶ characterized by a well-circumscribed delusional system, which attempts to deny the physical reality of the individual's body.^{30,59} I have suggested the term Paranoia Transsexualis⁷⁹ as a descriptive name for this syndrome. Northrup⁷³ has interpreted this syndrome as a defense against overt psychosis in which the transsexual projects his delusional identification onto society, and to the degree that this role is accepted, the delusional ideation is reinforced. As long as the transsexual's identity is not challenged, he remains composed and well integrated. However, should his feminine identity be challenged, he usually reacts with indignation, hostility, feelings of persecution and injustice,¹⁰² and even overt paranoid ideation (30%). At this point, his thinking becomes tenuous and he is threatened with disorganization. Although most authors indicate that the

transsexual is not psychotic in the schizophrenic sense, there are known instances of disorganization when the patient is pushed in the direction of masculinity.^{34,80} Of the transsexuals, 19% were thought to be overtly psychotic or schizophrenic, and 20% were hospitalized. Lukianowicz⁶⁶ has reported upon the rarity of transvestism in psychosis, and collected only 15 such cases in the Western literature. The transsexual frequently decompensates, his defense and encapsulation fail and he becomes overtly depressed (38%).² In this series, 35% have threatened suicide, and 17% have made overt attempts, sometimes designed to persuade the physician to give in to his wishes for the operation. Self-mutilation (see Table 2) is reported in 18 of these individuals, and this should be distinguished from self-mutilation not associated with a desire for change of sex.^{13,88} Finally, a grandiose quality is present in 30%. The transsexual is also exhibitionistic (30%) and seems to enjoy the attention he obtains as a medical curiosity.^{2,102} Kubie⁶⁵ has mentioned the drive to become both sexes, indicating that this is not an uncommon fantasy. What could be more unique than to pass successfully from one sex to another? Thus, the paranoid and grandiose features are present in at least 30% of the cases, and the individual may move along the spectrum of paranoid psychosis to better encapsulation at the paranoia pole, or toward disorganization at the paranoid schizophrenic pole.

Results of Surgery

Of the 100 cases reviewed, a total of 48 were successful in obtaining some alteration of their sexual anatomy. This information is summarized in Table 2, with an attempt to report the postoperative evaluations. Six patients performed autocastration, three transsexuals amputated their penises, and nine others attempted self-mutilation. These dramatic acts illustrate the intense abhorrence of their genitalia, and the desperate need to rid themselves of these organs. Not all who were castrated surgically (42 cases) were successful in obtaining penectomy (30 cases). Those who did obtain the removal of their genitalia were not always successful in obtaining plastic surgery for the construction of an artificial vagina (20 cases). These patients ranged in age from 19 to 44 years at the time of the initial surgical procedure, with the aver-

TABLE 2.—Operated Cases of Male Transsexualism

Case No.	Self-Mutilation		Surgery			Postoperative Evaluation
	Age		Castration, Age	Penectomy, Age	Artificial Vagina, Age	
2	6	Attempted penectomy	30	39	39	None
3			20's	20's	20's	None
7	42	Attempted penectomy	42			1 Legal change of status—felt happy
9	43	Autopenectomy				5 Functioning satisfactorily
11			29	29	30	3 Beneficial: legal change of status
12	42	Attempted castration	40	42		3 Requesting further surgery: threatens suicide
14		Autocastration				Still requesting penectomy
15			35	35		1/2 Satisfied: legal change of status
16			Unk *	Unk	Unk	Found genuine inner peace
19		Autopenectomy	Unk		Unk	Regretted surgery
20		Attempted castration	Unk			Legal change of status
21	39	Autopenectomy	40			5 Legal change of status—content & functioning
22			44			Less depressed
24	19	Attempted castration	19			16 Legal change—happy, still requesting surgery
25			42	42		Death from postoperative pulmonary embolism
26			23		23	1/6 Legal change: requested male organs
27		Attempted penectomy	Unk			None
28			Unk			None
29			26	26	Unk	12 Famous female entertainer
30			33	41	42	8 Legal Change: depressed and paranoid
33			30's	30's	30's	3 Legal change: well adjusted in new role
34			26	26		12 Legal change: requesting female hormones
41		Autocastration				Settled down afterward: living as woman
42			Unk	Unk	Unk	Very happy after a few years
43	40's	Autocastration	Unk	Unk	Unk	2 Seems better—no sexual activity
48	43	Autocastration		43		5 1/2 More comfortable—fair adjustment
50	23	Autocastration				1/2 Requesting further surgery
54		Attempted penectomy	Unk	Unk	Unk	3 Feels well
55			30's	30's	30's	1 Satisfied
56			33	34		None
57			26	26	27	1 Legal change of status: definitely better
58			35	35		None
59	10	Attempted penectomy	21	21		None
62			41	41		4 Able to work effectively
67	32	Autocastration				Requesting further surgery
72			41			4 Requesting implantation of ovaries
73			27	27	32	7 Unsatisfactory—psychotic
74			27	27		6 1/2 Good: depression, addiction, prostitute
77			34			Requesting further surgery
78			44	44		Happy
79			25	25	25	Legal change of status: strip-tease artist
80			Unk	Unk	Unk	None: prostitute
81			Unk	Unk	Unk	None: prostitute
82		Attempted castration	Unk			None
83			32	32		8 Requesting artificial vagina—very happy
88			26	26	26	1 Satisfied—hopes to marry soon
93			Unk	Unk	Unk	None
97			20			25 Requesting further surgery—paranoid
Total 48		18	42	30	20	

* Age unknown.

age age being 32.2 years. In this series of 48 operated cases, 20 were thought to be definitely improved by the reporting author, whereas six were thought to be definitely not improved. Eleven cases were equivocal, still requesting further surgery or not substantially different, and no follow-up information was given for the remaining 11 cases. Despite the apparent success indicated by these figures, I suggest caution in interpreting these results. The criteria for success are difficult to determine, and this leaves the reporting author vulnerable to his own

bias. Also, it is probable that positive outcomes are more likely to be reported, because of the controversial nature of these demasculinizing procedures. Benjamin^{9,10} reported on 44 patients who obtained the so-called conversion operation. Of the 40 who were followed post-operatively, 34 were thought to have a satisfactory, if not excellent, result. Twelve of these transsexuals were subsequently married, as "women" to men. Most of these patients had been referred for psychiatric evaluation prior to surgery. The transsexual strongly resists any

suggestion of psychotherapy which is aimed at reversing his psychosexual orientation. In those 26 cases where this has been attempted, psychotherapy has not been successful, with two possible exceptions.^{35,87}

Those who favor the operation^{3,9,10,45,46,55} point out that the psychological determinants of sexual role behavior are more significant than the physiological ones. They question the priority given to the external anatomy, when it has been demonstrated that this is not nearly as important in determining gender role as other factors. Why force the patient against his will into prolonged psychotherapy, when his chance for change is poor? They maintain that the operation is faster, more economical, but most important, it is successful, and therefore it is inhumane to refuse help to these desperately unhappy individuals. More than once has the surgeon's scalpel been prompted by suicide attempts or self-mutilation. Somatic treatment for emotional or psychiatric disease is well accepted, and procedures such as prefrontal lobotomy and electroconvulsive therapy have been used empirically for relief of symptoms. Benjamin⁹ points out that estrogens are excellent tranquilizers. While this may be true, the transsexuals in this series who received estrogens (33 cases), were not satisfied with hormone therapy only and looked forward to the operation itself. Certainly they were pleased with the gynecostasia and other feminizing changes.

Many physicians feel surgery for this condition is unethical or immoral. Some who oppose surgery do so on emotional and nonscientific grounds, and this argument does not help to clarify the matter. On the other hand, there are a number of objections, not the least of which is a serious doubt as to the results following surgery. The reports published reveal some disturbing evidence. Frequently the criterion for success is the patient's statement that he is happy that he had surgery. But what is the evidence for better adjustment? Some do marry and appear to be stable in this relationship.^{9,10} The incidence of prostitution among operated transsexuals is unknown, but there are several known instances of this.^{55,97} Others have become depressed,^{25,55} require subsequent hospitalization, make further demands for new operations, or are dissatisfied with the one they have obtained. Some have demanded the implantation of ova-

ries or uteri,^{12,25} insisting that this procedure is possible and that they could become pregnant. There seems to be an endless pursuit of a goal which is clearly impossible. A few have regretted their decision and wish to be made male again.^{6,29} On one occasion the patient brought suit against the physicians involved, despite the fact that he implored the physicians involved for some time, and gave his written consent. Two well-known male transsexuals^{52,97} have capitalized on their unique sexual status by becoming nightclub entertainers. Many who object to surgery are aware that psychotherapy is frequently not successful with reference to changing the psychosexual identification but it may well be possible to help the transsexual to accept his situation without the removal of his genitalia. Usually the transsexual feels that the operation will solve all his problems, and he will be able to live for the first time. The male transsexual claims that he is feminine in every respect but the physical. He feels that once he has the female anatomical structure, this will finally correct the error of nature, and bring his mind and body into harmony. But, there is some evidence to suggest that his understanding of the feminine role is superficial and unrealistic.¹⁰² This irreversible step presents numerous problems of adjustment and serious legal complications. It is true that some have been successful in obtaining a legal change of status (12 cases), but most have not.

Whatever the theoretical considerations, the primary deterrent is probably quite practical. Because this operation is still a very controversial issue, even the physician who does feel the operation is warranted is reluctant to jeopardize his position and career. It is interesting to note that in those cases where the transsexual has mutilated himself, he usually has little trouble in finding a surgeon to complete the transformation. Some who oppose the conversion operation strongly are extremely critical of the physician who cooperates in any way with the transsexual's demands. Some go further and claim him to be incompetent and irresponsible. In most cases, the physician has acted with sincerity and soul-searching deliberation. He is aware of the criticism and censure to which he becomes vulnerable, and thus he is often a person of conviction, who is willing to risk his reputation. It is unfair to assume that all physicians

TABLE 3.—Series of Cases of Transsexualism

Author	Date	Source of Material	Male,		Female,		Ratio M:F
			Total/Operated	Total/Operated	Total/Operated	Total/Operated	
Hamburger ⁵²	1953	Letters from world	357	0	108	0	3:1
Overzier ⁷⁷	1955	Cases in Europe	17	0	0	0	
Randell ^{84, 85}	1959	Cases in England	21	2	9	1	2:1
Benjamin ^{9, 10}	1964	Cases in US	108	44	17	7	6:1
Pauly ⁷⁹	1965	Review medical literature	100	48	28	11	3.5:1
		Total	603	94	162	19	3.7:1

who have decided in favor of the conversion operation are incompetent.

Frequency

The number of reported cases of transsexualism are summarized in Table 3. It is clear that this figure represents only a fraction of the cases which must exist. What was thought to be an exceedingly rare syndrome⁵² may actually be more prevalent than earlier suspected. Table 1 indicates an increasing incidence of male transsexualism since 1950. Although transsexualism was thought to be an exclusively male sexual deviation⁸⁷ it is now clear that females are included in this syndrome.^{10,79} A total of 603 male transsexuals are reported, compared with 162 females. Whereas 94 men were successful in obtaining some form of demasculinizing surgery, only 19 women have obtained some form of defeminizing surgery (mastectomy and/or hysterectomy). Transsexualism, as determined by published reports, is approximately 3.7 times more common in the male than in the female.

Summary

The psychiatric syndrome of male psychosexual inversion in its most extreme form has been presented. The transsexual attempts to deny and reverse his biological sex and pass into and maintain the opposite gender role identification. Claims of organic or genetic etiology have not been substantiated, although there is some evidence to suggest that biological factors, unproven in man, are prerequisite in setting the stage for the operation of early psychosocial determinants in the establishment of gender role. Core gender identity is established early and is difficult, if not impossible, to reverse. Psychosexual inversion is seen as a spectrum of disorders, from mild effeminacy to homosexuality, transvestism, and finally transsexualism, each representing a more extreme form, and often including the previous manifestation. An

attempt to approximate the female anatomical structure is the final step in this syndrome. The justification for the conversion operation is discussed from both points of view. At least 94 men and 19 women have obtained surgical intervention to some degree. Follow-up studies at the present time indicate some apparent success, but these results must be interpreted with caution. An important aim of this paper is to stress the need for continued investigation, in order to answer the question so dramatically raised by the person requesting a change of sex. An understanding of this extreme example of psychosexual pathology may prove helpful in furthering our knowledge of gender role and psychosexual development.

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Reliability and Clinical Utility of Gender Identity-Related Diagnoses: Comparisons Between the ICD-11, ICD-10, DSM-IV, and DSM-5

Annelou L.C. de Vries, MD, PhD,¹ Titia F. Beek, MA,² Karlien Dhondt, MD, PhD,³
 Henrica C.W. de Vet, PhD,⁴ Peggy T. Cohen-Kettenis, PhD,²
 Thomas D. Steensma, PhD,² and Baudewijntje P.C. Kreukels, PhD²

Abstract

Purpose: The World Health Organization general assembly approved the 11th revision of the International Classification of Diseases (ICD) in 2019 which will be implemented in 2022. Gender identity-related diagnoses were substantially reconceptualized and removed from the mental health chapter so that the distress criterion is no longer a prerequisite. The present study examined reliability and clinical utility of gender identity-related diagnoses of the ICD-11 in comparison with the Diagnostic and Statistical Manual of Mental Disorders (DSM)-5, ICD-10, and DSM-IV.

Methods: Sixty-four health care providers assessed six videos of two children, two adolescents, and two adults referred for gender incongruence. Each provider rated one pair of videos with three of the four classification systems (ICD-11, DSM-5, ICD-10, and DSM-IV-TR). This resulted in 72 ratings for the adolescent and adult diagnoses and 59 ratings for the children's diagnoses.

Results: Interrater agreement rates for each instrument ranged from 65% to 79% for the adolescence/adulthood diagnoses and from 67% to 94% for the childhood diagnoses and were comparable regardless of the system used. Only agreement rates for ICD-11 were significantly better than those for DSM-5 for both age categories. Clinicians evaluated all four systems as convenient and easy to use.

Conclusion: In conclusion, both classification systems (DSM and ICD) and both editions (DSM-IV and DSM-5 and ICD-10 and ICD-11) of gender identity-related diagnoses seem reliable and convenient for clinical use.

Keywords: classification, DSM, gender dysphoria, gender incongruence, ICD, reliability, utility

Introduction

ON MAY 25th 2019, the World Health Organization's general assembly approved the 11th revision of the International Classification of Diseases (ICD), including a reconceptualization of the gender identity-related diagnoses.¹ Fifty years ago, a diagnostic category describing the incongruence between one's experienced and assigned gender was introduced in the two most broadly used (mental) health classification systems, the ICD of the World Health Organization (WHO) and the Diagnostic and Statistical Manual of

Mental Disorders (DSM) of the American Psychiatric Association (APA).^{2,3} In the ICD-9 and the ICD-10 at the time, the term Transsexualism was used for the gender identity-related diagnosis.⁴ The DSM-III diagnostic term for adults was also Transsexualism (DSM-III).⁵ This term was first changed to Gender Identity Disorder (GID, DSM-IV) and subsequently to Gender Dysphoria (GD) in the most recent version of the DSM, the DSM-5.^{6,7} The ICD-11 Working Group on the Classification of Sexual Disorders and Sexual Health proposed the term Gender Incongruence (GI), a universal term with no reference to emotional stress.⁸⁻¹⁰

Departments of ¹Child and Adolescent Psychiatry and ²Medical Psychology, Center of Expertise on Gender Dysphoria, Amsterdam University Medical Centers, Location VUmc, Amsterdam, The Netherlands.

³Center for Sexology and Gender, Pediatric Gender Clinic, Ghent University Hospital, Ghent, Belgium.

⁴Department of Epidemiology and Biostatistics, Amsterdam Public Health Research Institute, Amsterdam University Medical Centers, Location VUmc, Amsterdam, The Netherlands.

Since its introduction into the classification systems, there have always been controversies around the gender identity-related diagnoses.¹¹ Because medical gender affirmative interventions are not (yet) needed in prepubertal children, in particular the childhood diagnosis is considered unnecessary by some to allow for access to health care.^{12–14} Yet, clinicians working in other contexts claim that a childhood diagnosis for gender incongruence is still necessary to provide appropriate care.^{15,16} The diagnosis for adolescents and adults has also been criticized.¹³ Most importantly, gender incongruence by itself is considered not a mental disorder, but one of many possible expressions of gender diversity.^{10,17,18} To assure access to care, while revising the DSM-IV, the diagnosis was retained in the DSM-5, but in a separate chapter away from conditions such as sexual dysfunctions and paraphilia. In the ICD-11, the diagnosis is entirely removed from the mental health disorders chapter and placed in a separate chapter named “Conditions related to Sexual Health.” This shift is to improve transgender persons’ human rights and health status by avoiding the combined stigmatization that is still associated with being transgender as well as with having a psychiatric disorder.^{8,9,18}

Classification systems in general have proven to be of great value in that a criteria-based approach to diagnosis has markedly improved identification of disorders and diseases.¹⁹ Classification may serve as an important and helpful tool for communication for researchers, policy makers, and clinicians so that when they refer to certain features, they mean the same thing.²⁰ While revising the classification systems, the diagnostic criteria should have a good interrater reliability.²¹ Therefore, in successive revisions of the DSM and ICD, field studies have been performed to test the degree of agreement between clinicians on diagnostic categorization of the most prevalent conditions.^{22,23}

Gender identity-related diagnostic criteria have never been formally part of the field trials, neither for the DSM-5 nor for previous DSM versions or for the various ICD editions. Only the diagnostic criteria for the childhood diagnosis have been examined in one DSM-III interrater reliability study that used parent reported chart information of gender-referred children.²⁴

While preparing the 11th version of the ICD Mental Health Chapter, the WHO put a particular focus on clinical utility, that is, accuracy of description, ease of use, and feasibility of the classification system.^{25,26} With regard to the gender identity-related diagnoses, the ICD-11 field studies so far have taken place in low and middle-income countries.^{27–29} How they would be experienced in high-income countries with a long tradition of providing transgender care is unknown at present.

While in most countries the ICD is the main classification system used, the DSM is recommended in North America and some other countries. Making a comparison between both systems is of interest especially with regard to the gender identity-related diagnoses, due to the reconceptualization and placement outside of the mental health chapter and deletion of distress as an inherent characteristic of gender incongruence.

The aim of the current study was to test the interrater reliability of the gender identity-related diagnostic categories in a high-income country specialty setting according to current guidelines (ICD-11 and DSM-5) and their previous versions

(ICD-10 and DSM-IV). Further, we aimed to study similarities and differences between clinical judgments according to ICD-10, ICD-11, DSM-IV, and DSM-5, with a specific focus on the differences with the reconceptualized GI (ICD-11) diagnosis. A last aim of the present study was to assess the clinical utility of the diagnoses by asking the participating health care providers about their experiences with the different systems and editions.

Method

Setting

The WHO published a draft of the proposed ICD-11 to receive input on the proposed structure and diagnostic criteria.^{30,31} The Center of Expertise on Gender Dysphoria (CEGD) of the Amsterdam University Medical Centers, location VUmc in the Netherlands and the Department of Sexology and Gender Problems (DSGP) of Ghent University Hospital in Belgium have been offering gender-affirming treatment since the 1970s. The WHO encouraged these specialized clinics to perform field studies on gender incongruence. The present study was part of a larger project, which was financially supported by three Dutch Ministries (Foreign Affairs; Health, Welfare and Sport; and Education, Culture and Science).^{14,17}

The study was approved by the VUmc Medical Ethics Committee and all interviewed persons (and/or their parents depending on age) gave informed consent for use of the video material for this study.

Participants

In total, 64 health care providers participated in the study during one of six sessions that were organized. Some health care providers were specialized in health care related to gender identity/incongruence and some were not. Mental health professionals (psychologists (in training) and psychiatrists (in training)) specialized in gender incongruence were recruited from the CEGD and the DSGP. Health care providers not specialized in transgender health care were recruited during two meetings, one for psychiatry residents specializing in child and adolescent psychiatry and one for team members of a consultative liaison psychiatry service (psychiatrists (in training), psychologists, psychiatric nurses, and medical students).

Procedure

Between December 2014 and June 2015, six sessions for video rating were organized. Each test session had a similar structure and took about 1 hour: a researcher gave a short introduction to the study. This introduction was also provided as one written page before the different sets of diagnostic criteria that were to be rated. Voluntary participation and confidentiality were explained to be secured. Informed consent was signed for each participating health care provider. Two videos were presented and assessed using three of the four different instruments (for convenience reasons making the session not longer than 1 hour); every participant scored in random order the ICD-11 guidelines and the DSM-5 criteria, and a 3rd set of indicators (either the ICD-10 or the DSM-IV). After that, a few general questions about the use of the instruments and a number of background questions had to be answered. Participants watched one of the following

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three pairs of videos: adolescent 1 and adult 2; adolescent 2 and adult 1; and child 1 and child 2.

For the adolescent and adult diagnoses, there were 72 ratings in total (of 37 different raters) on ICD-11 and DSM-5, 39 ratings (20 raters) on ICD-10, and 34 ratings (17 raters) on DSM-IV. For the children's diagnoses, 59 ratings (30 raters) were collected on ICD-11 and DSM-5, 32 ratings on ICD-10 (16 raters), and 27 ratings on DSM-IV (14 raters).

Materials

Videos. In total, six diagnostic interviews by a psychologist/psychiatrist (two psychologists, one psychiatrist) were recorded of a person referred to the CEGD. Two individuals were adults, two were adolescents, and two were children. Some background information of each person is available from the authors. In all age categories, an effort was made to select one person without diagnostic difficulties and one person with a more complex gender development history and presentation.

Classification indicators. We used score sheets based on eight (four for adolescents/adults and four for children) classification systems: WHO's ICD-10 (Transsexualism) and the proposed guidelines of ICD-11 (Gender Incongruence) and the APA's DSM-IV-TR (Gender Identity Disorder) and DSM-5 (Gender Dysphoria). Participants had to decide whether indicators were present or not and, based on these indicators, whether the diagnoses were applicable to the persons in the video. When available, official Dutch versions of the Classifications were used. For ICD-11,³¹ translations were not yet available and the research team translated the guidelines into Dutch. This translation was not created by the WHO.

Questions regarding utility of classification systems. Two questions were asked to assess the experienced clarity of the diagnostic indicators (answer options on a 5 point scale; 1 = very unclear, 2 = unclear, 3 = neutral, 4 = clear, and 5 = very clear) and the certainty with which a rater thought they made the correct decision (diagnosis present/absent, answer options on a 5 point scale; 1 = very unsure, 2 = unsure, 3 = neutral, 4 = sure, and 5 = very sure). Also, raters were asked which of the instruments they thought was most convenient to use, and which they felt helped them best to

come to a correct diagnosis. For each classification system it was asked whether it was easy to use (answer options yes, no, or no opinion).

Analyses

Agreement between raters was calculated by dividing the total number of raters assessing a classification (present) by the total number of ratings. Agreement percentages were chosen for clinical interpretation and due to the large number of raters for each case.^{32,33} Chi-square statistics were performed to examine if the agreement between the raters on presence or absence of a diagnosis differed between the respective instruments with a significance set at $p < 0.05$. One-way analyses of variance (ANOVA) were performed to compare mean clarity and certainty scores between instruments. Chi-square statistics were also used to examine whether clinical utility (convenience, ability to diagnose, and ease of use) was assessed differently between the instruments. All analyses were performed for the child and adolescent/adult videos separately.

Results

Adolescent/adult diagnoses

In Table 1, the agreement between the raters is presented on the presence/absence of a diagnosis according to the four instruments. For all adolescent and adult videos, a majority of raters decided a diagnosis was present. The agreement between the raters was always agreement on the presence of a diagnosis. To see if the number of persons who received a diagnosis differed across instruments, the agreement rates between the respective instruments were compared. Only the ICD-11 and DSM-5 raters were significantly different from each other (75.71% vs. 67.65%, $\chi^2 = 10.58$, $p = 0.001$).

Table 2 shows the presence/absence of each indicator of the ICD-11 GI diagnosis.³¹ Table 3 shows the presence/absence of each indicator of the DSM-5 GD diagnosis.⁷ The agreement between raters on the presence/absence of each indicator of the respective other classification systems ICD-10 and DSM-IV are available from the authors. Agreement was lowest on the DSM-5 subindicators, "A strong conviction that one has the typical feelings and reactions of the other gender (or some alternative gender that is different from one's assigned gender)" (43/67, 64.18%) and

TABLE 1. AGREEMENT BETWEEN RATERS ON THE PRESENCE OF A DIAGNOSIS ACCORDING TO FOUR DIFFERENT CLASSIFICATION SYSTEMS

Instrument	Observations N	Diagnosis present and agreement rate N	χ^2 between instrument comparison		
			ICD-11 χ^2 p	DSM-5 χ^2 p	ICD-10 χ^2 p
Adolescents/ Adults	70	53/75.71%			
	68	46/67.65%	10.578; 0.001*		
	38	30/78.95%	0.145; 0.703	1.534; 0.216	
	31	20/64.52%	1.345; 0.246	0.094; 0.759	1.782; 0.182
Childhood	56	50/89.29%			
	58	39/67.24%	8.087; 0.004*		
	32	30/93.75%	0.491; 0.483		
	26	20/76.92%	2.1723; 0.141	0.805; 0.369	3.416; 0.0645

*Significant difference at $p < 0.05$.

ICD, International Classification of Diseases; DSM, Diagnostic and Statistical Manual of Mental Disorders.

TABLE 2. AGREEMENT BETWEEN RATERS FOR EACH VIDEO PER INDICATOR AND THE DECISION ON THE PRESENCE OF A DIAGNOSIS ACCORDING TO THE ICD-11 FOR ADOLESCENTS/ADULTS

		Adolescent 1		Adolescent 2		Adult 1		Adult 2		Total	
		n = 14	%	n = 23	%	n = 22	%	n = 13	%	n = 72	%
<i>Agreement raters</i>											
A1	A strong dislike or discomfort with one's primary and/or secondary sex characteristics (in adolescents, anticipated secondary sex characteristics) due to their incongruity with the experienced gender.	11/14		22/23		22/22		7/13*		62/72	86.11%
A2	A strong desire to be rid of some or all of one's primary and/or secondary sex characteristics (in adolescents, anticipated secondary sex characteristics) due to their incongruity with the experienced gender.	12/14		23/23		22/22		7/13		64/72	88.89%
A3	A strong desire to have the primary and/or secondary sex characteristics of the experienced gender.	13/14		21/23		16/22		10/13		60/72	83.33%
A4	A strong desire to be treated (to live and be accepted) as a person of the experienced gender.	14/14		19/21		15/21		8/13		56/69	81.16%
A total	A marked incongruence between the individual's experienced gender and the assigned sex, as manifested by at least two of the above.	14/14		22/23		21/22		10/13		67/72	93.06%
B	The experienced gender incongruence must have been continuously present for at least several months.	14/14		22/23		22/22		12/13		70/72	97.22%
C	The diagnosis cannot be assigned prior to the onset of puberty.	7/14		17/23		22/22		13/13		59/72	81.94%
Total	Do you consider the person to fulfil all indicators (A, B, and C)?	9/13	69.2%	14/22	63.6%	21/22	95.5%	9/13	69.2%	53/70	75.71%

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* = most people agreed the criterion was not present (in all other cases, most raters agreed that the criterion was present).

“The condition is associated with clinically significant distress or impairment in social, occupational, or other important areas of functioning” (48/70, 68.57%), and on the DSM-IV indicators, “Belief that he or she was born the wrong sex” (22/32, 68.75%) and “The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning” (24/32, 75.00%). The lowest agreement rate of the ICD-10 subindicators was 84.62% (33/39, “Not a symptom of another mental disorder, such as schizophrenia”).

Childhood diagnoses

Table I also shows the agreement between the raters regarding the four childhood diagnoses according to the different classification systems, ICD-11, ICD-10, DSM-5, and DSM-IV. For both childhood videos, a majority of raters decided a diagnosis was present. Thus, the agreement between the raters was always agreement that a diagnosis was present. To see if

the number of raters who assessed a diagnosis to be present differed across instruments, the agreement rates between the respective instruments were compared. Only the ICD-11 and DSM-5 rates were significantly different from each other (89.29% vs. 67.24%, $\chi^2 = 8.08$, $p = 0.004$).

Table 4 shows the agreement between raters of the presence/absence of each indicator of the ICD-11 GI diagnosis.³¹ Table 5 shows the agreement between raters of the presence/absence of each indicator of the DSM-5 GD diagnosis.⁷ The agreement between raters on the presence/absence of each indicator of the respective other classification systems ICD-10 and DSM-IV are available from the authors. Agreement was lowest on the DSM-5 subindicators “A strong dislike of one's sexual anatomy” (40/57, 70.18%) and “The condition is associated with clinically significant distress or impairment in social, occupational, or other important areas of functioning” (41/56, 73.21%), and on the DSM-IV indicators, “The disturbance is not concurrent with a physical intersex condition” (17/27, 62.96%) and

TABLE 3. AGREEMENT BETWEEN RATERS FOR EACH VIDEO PER CRITERION AND THE DECISION ON THE PRESENCE OF A DIAGNOSIS ACCORDING TO THE DSM-5 FOR ADOLESCENTS/ADULTS

		<i>Adolescent 1</i>	<i>Adolescent 2</i>	<i>Adult 1</i>	<i>Adult 2</i>	<i>Total</i>	
		n = 14	n = 23	n = 22	n = 13	n = 72	%
		<i>Agreement raters</i>					
A	A marked incongruence between one's experienced/expressed gender and one's assigned gender of at least 6 months duration as manifested by at least two of the following:	14/14	23/23	22/22	10/13	69/72	95.83%
A1	A marked incongruence between one's experienced/expressed gender and one's primary and/or secondary sex characteristics (or in younger adolescents, the anticipated secondary sex characteristics).	14/14	22/23	21/22	10/13	67/72	93.06%
A2	A strong desire to be rid of one's primary and/or secondary sex characteristics because of a marked incongruence with one's experienced/expressed gender (or in younger adolescents, a desire to prevent the anticipated secondary sex characteristics).	14/14	23/23	22/22	8/13*	67/72	93.06%
A3	A strong desire for the primary and/or secondary sex characteristics of the other gender.	12/14	23/23	15/22	9/13	59/72	81.94%
A4	A strong desire to be of the other gender (or some alternative gender that is different from one's assigned gender).	14/14	23/23	19/22	8/13	64/72	88.89%
A5	A strong desire to be treated as the other gender (or some alternative gender that is different from one's assigned gender).	14/14	21/23	12/21	7/13	54/71	76.06%
A6	A strong conviction that one has the typical feelings and reactions of the other gender (or some alternative gender that is different from one's assigned gender).	13/14	11/21	11/21	8/11*	43/67	64.18%
B	The condition is associated with clinically significant distress or impairment in social, occupational, or other important areas of functioning.	8/14*	15/22	18/21	7/13	48/70	68.57%
Specify if:							
With a disorder of sex development (e.g., a congenital adrenogenital disorder such as E25.0 congenital adrenal hyperplasia or E34.50 androgen insensitivity syndrome).							
Coding note: Code the disorder of sex development as well as gender dysphoria.							
Specify if:							
Posttransition: The individual has transitioned to full-time living in the desired gender (with or without legalization of gender change) and has undergone (or is preparing to have) at least one cross-sex medical procedure or treatment regimen—namely, regular cross-sex hormone treatment or gender reassignment surgery confirming the desired gender (e.g., penectomy, vaginoplasty in a natal male; mastectomy or phalloplasty in a natal female).							
Total	Do you consider both the A and B criterion to be present in the video?	7/13 (53.8%)	14/21 (66.7%)	18/21 (85.7%)	7/13 (53.8%)	46/68	67.65%

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* = most people agreed the criterion was not present (in all other cases, most raters agreed that the criterion was present).

TABLE 4. AGREEMENT BETWEEN RATERS FOR EACH VIDEO PER INDICATOR AND THE DECISION ON THE PRESENCE OF A DIAGNOSIS ACCORDING TO THE ICD-11 FOR CHILDREN

		<i>Child 1</i>		<i>Child 2</i>		<i>Total</i>	
		<i>n = 29</i>	%	<i>n = 30</i>	%	<i>n = 59</i>	%
A1	A strong desire on the child's part to be a different gender than the assigned sex, or insistence that he or she is a gender different from one's assigned gender.	29/29		30/30		59/59	100%
A2	A strong dislike on the child's part of his or her sexual anatomy or anticipated secondary sex characteristics and/or a strong desire for the primary and/or anticipated secondary sex characteristics that match the experienced gender. For example, a child assigned at birth as a boy says he wants to be rid of his penis or a child assigned at birth as a girl says she does not want to develop breasts when she grows up.	22/29		29/30		51/59	86.44%
A3	Make-believe or fantasy play, toys, games, or activities and playmates that are typical of the experienced gender rather than the assigned sex. Gender incongruent children assigned as boys reject typically "masculine" toys, games, and activities and avoid rough-and-tumble play. Gender incongruent children assigned as girls reject "feminine" toys, games, and activities and like rough-and-tumble play.	28/29		30/30		58/59	98.31%
A total	In pre-pubertal children, a marked incongruence between the child's experienced/expressed gender and the child's assigned sex as manifested by all of the above indicators.	22/28		29/29		51/57	89.47%
B	The incongruence must have persisted for about 2 years.	22/27		30/30		52/57	91.23%
C	The diagnosis can only be assigned to children before puberty.	26/27		27/28		53/55	96.36%
Total	Do you consider the person to fulfil all indicators (A, B, and C)?	20/26	76.92%	30/30	100%	50/56	89.29%

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"The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning" (20/26, 76.92%). The lowest agreement rate of the ICD-10 subindicators was 87.10% (27/31, "A profound disturbance of the normal gender identity; mere tomboyishness in girls or girlish behavior in boys is not sufficient").

Clinical utility

Table 6 shows which of the different classification systems raters found most convenient to use and with which system they felt most able to make a correct diagnosis and if the classification system was considered easy to use.

Clarity. No significant differences were found between the mean clarity-scores of all instruments for the adolescent/adult diagnoses. Scores were 3.63 (standard deviation [SD] 0.76) for the ICD-10, 3.74 (SD 1.01) for the ICD-11, 3.81 (SD 0.91) for the DSM-IV-TR, and 3.83 (SD 0.89) for the DSM-5. For the childhood diagnoses, they were 3.27 (SD 1.03), 3.55 (SD 0.87), 3.90 (SD 0.67), and 3.93 (SD 0.69) for the ICD-10, ICD-11, DSM-IV-TR, and DSM-5, respectively. Post hoc comparisons revealed that differences existed in percentages that chose an instru-

ment as most convenient to use with the exception of the comparison between the ICD-10 and ICD-11 as well as between the DSM-IV-TR and the DSM-5.

Certainty. No significant differences were found for mean certainty scores (regarding coming to a diagnosis), which were 3.25 (SD 1.2) for the ICD-10, 3.58 (SD 1.08) for the ICD-11, 3.37 (SD 1.12) for the DSM-5, and 3.4 (SD 1.07) for the DSM-IV-TR diagnoses of adolescents/adults, and were 3.75 (SD 1.08), 3.64 (SD 1.06), 3.46 (SD 1.09), and 3.77 (SD 0.99), respectively, for the childhood diagnoses.

Ease of use. The majority of the participants (74.3%–84.2%) considered the respective systems easy to use for the adolescent/adult diagnoses. For the childhood diagnoses, these percentages were somewhat lower (ranging from 46.7% to 85.7%). See Table 6. There were no significant between-instrument differences with regard to ease of use.

Discussion

With substantial to almost perfect agreement rates of 75% (53 of 70 raters agree) for the adult/adolescent diagnosis and 89% (50 of 56 raters agree) for the childhood diagnosis,

TABLE 5. AGREEMENT BETWEEN RATERS FOR EACH VIDEO PER CRITERION AND THE DECISION ON THE PRESENCE OF A DIAGNOSIS ACCORDING TO THE DSM-5 FOR CHILDREN

		<i>Child 1</i>	<i>Child 2</i>	<i>Total</i>	
		n = 29	n = 30	n = 59	%
A	A marked incongruence between one's experienced/expressed gender and one's assigned gender of at least 6 months duration as manifested by at least six of the following (one of which must be Criterion A1).	22/28	30/30	52/58	89.66%
A1	A strong desire to be of the other gender or an insistence that one is the other gender (or some alternative gender that is different from one's assigned gender).	27/28	30/30	57/58	98.28%
A2	In boys (assigned gender), a strong preference for cross-dressing or simulating female attire; or in girls (assigned gender), a strong preference for wearing only typical masculine clothing and a strong resistance to the wearing of typical feminine clothing.	29/29	30/30	59/59	100%
A3	A strong preference for cross-gender roles in make-believe play or fantasy play.	25/28	25/26	50/54	92.59%
A4	A strong preference for the toys, games or activities stereotypically used or engaged in by the other gender.	23/29	30/30	53/59	89.83%
A5	A strong preference for playmates of the other gender.	29/29	28/29	57/58	98.28%
A6	In boys (assigned gender), a strong rejection of typically masculine toys, games, and activities and a strong avoidance of rough-and-tumble play; or in girls (assigned gender), a strong rejection of typically feminine toys, games, and activities.	22/28	30/30	52/58	89.66%
A7	A strong dislike of one's sexual anatomy.	15/27	25/30	40/57	70.18%
A8	A strong desire for the physical sex characteristics that match one's experienced gender.	15/28	30/30	45/58	77.59%
B	The condition is associated with clinically significant distress or impairment in social, occupational, or other important areas of functioning.	16/26	25/30	41/56	73.21%
Specify if:					
With a disorder of sex development (e.g., a congenital adrenogenital disorder such as E25.0 congenital adrenal hyperplasia or E34.50 androgen insensitivity syndrome).					
Coding note: Code the disorder of sex development as well as gender dysphoria.					
Specify if:					
Posttransition: The individual has transitioned to full-time living in the desired gender (with or without legalization of gender change) and has undergone (or is preparing to have) at least one cross-sex medical procedure or treatment regimen—namely, regular cross-sex hormone treatment or gender reassignment surgery confirming the desired gender (e.g., penectomy, vaginoplasty in a natal male; mastectomy or phalloplasty in a natal female).					
Total	Do you consider both A and B criterion to be present in the video?	15/29 (51.72%)	24/29 (82.76%)	39/58	67.24%

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TABLE 6. CLINICAL UTILITY OF CLASSIFICATION SYSTEMS: FREQUENCIES AND PERCENTAGES OF POSITIVE RESPONSES

Classification used	Which classification system did you think was most convenient to use?					Comparison between different instruments $X,^2 p$
	ICD-10	ICD-11	DSM-5	DSM-IV-TR	No preference – no opinion	
Adolescent/adult:	4/18 (22.2%)	7/33 (21.2%)	13/33 (39.4%)	6/15 (40.0%)	3/33 (9.1%)	3.81; 0.283
Childhood:	2/13 (15.4%)	3/24 (12.5%)	12/24 (50.0%)	6/11 (54.5%)	1/24 (4.17%)	11.99; 0.007*
	Which classification system enabled you best to make a correct diagnosis?					
Adolescent/adult:	1/18 (5.6%)	5/32 (15.6%)	15/32 (46.9%)	5/14 (35.7%)	6/32 (18.8%)	8.49; 0.037 [^]
Childhood:	0/12 (0.0%)	4/24 (16.7%)	8/24 (33.3%)	5/12 (41.7%)	7/24 (29.2%)	1.68; 0.432 [#]
	Would the classification system be easy to use in practice? (percentage answering yes)					
Adolescent/adult:	16/19 (84.2%)	27/34 (79.4%)	26/35 (74.3%)	13/16 (81.3%)		0.83; 0.843
Childhood:	7/15 (46.7%)	19/29 (65.5%)	20/29 (69.0%)	12/14 (85.7%)		5.07; 0.166

*Significant difference between classification instruments; post hoc comparisons revealed that differences existed in percentages that chose an instrument as most convenient to use with the exception of the comparison between the ICD-10 and ICD-11 as well as between the DSM-IV-TR and the DSM-5.

[^]Significant difference between classification instruments; post hoc comparisons revealed that differences existed between the instruments on ability to make a correct diagnosis when comparing between the ICD-10 and DSM-5, ICD-10 and DSM-IV-TR, as well as between ICD-11 and DSM-5.

[#]Only comparison between ICD-11, DSM-5, and DSM-IV-TR; ICD-10=0.

the interrater agreement of both the adult/adolescent and childhood diagnoses can be considered good for the ICD-11.³⁴ Agreement for the DSM-5 diagnosis was lower, but still considered substantial with agreement rates of 67% (46 of 68 raters agree) for the adult/adolescent diagnosis and 67% (39 of 58 raters agree) for the childhood diagnosis.³⁴

These findings are in line with the only other reliability study of the childhood DSM-III Gender Identity Disorder diagnosis that found a high interrater agreement reliability, although with a different design.²⁴ In that study, two raters independently agreed in 34 of 36 cases with regard to the A criterion (expressed desire to be the other gender) and in 28 of 31 cases for the B criterion (anatomical dysphoria, only assessed in the birth assigned boys). These high agreement rates give confidence that the gender identity diagnoses can reliably be given independent of the system (ICD or DSM) used.

When comparing the different classification systems and editions, the interrater reliability of the ICD-11 diagnoses was not different from earlier versions of the ICD and DSM, but only differed from the DSM-5. An important difference between the ICD-11 and the DSM-5 with regard to gender identity-related diagnoses is the absence of the distress/impairment requirement in the ICD-11. When looking at the agreement rates for every indicator sepa-

rately, the lower agreement rate for the DSM-5 stemmed mainly from the lower agreement clinicians had with that specific criterion (Tables 3 and 5). Other field studies in lower-income countries (Mexico, South Africa, and Lebanon) interviewed transgender adults and found that experienced distress was more strongly connected with (harsh) social contexts, social rejection, and violence than to gender incongruence.^{27–29} The finding adds evidence to justifying the positioning of GI outside the ICD-11 mental health chapter.

With regard to utility (i.e., its goodness of fit, accuracy of description, and feasibility), many health care providers from this Dutch/Belgium sample picked the DSM classifications as most convenient to use and most enabling to make a correct diagnosis compared to the ICD. The preference for the DSM is probably due to the fact that in the Netherlands and Belgium, the DSM is the main system used. In ease of use, clarity, and felt certainty while making a diagnosis, there were no differences between the four systems. This provides confidence that both systems have the chance to be implemented faithfully and consistently.³⁵

Limitations

The study has several limitations that should be addressed. First, for determining reliability and agreement rates, the

relatively small number of assessed cases was a limitation. For feasibility reasons, we could only include six cases of three age groups. A future study should use a more heterogeneous sample of cases, including a better balance between different genders (e.g., also incorporating nonbinary and gender fluid identities).

The study was further limited by the fact that video-recorded specialist clinical interviews were rated, which could lead to interviewers guiding the raters by probing or pausing in a certain direction and causing undue high agreement.⁹

Importantly, this study was performed in a specialized transgender clinic setting with a long history of care and research. Whether the findings are also true in other contexts, where it is less likely that health care workers are highly educated and specialized, is yet unknown.

In this regard, it is important to note that in comparison with other field trials, for example, ICD-11 and DSM 5, that aimed to get large enough (also for relatively rare conditions) representative patient samples in general clinical settings using usual clinical interviews,^{22,23} the current study followed a different design. Because the aim of the study was to investigate reliability and utility in a specialty setting, as it is often organized in high income countries, the results may not be generalizable to other settings. The selected patient sample was therefore, in contrast to other field studies, more homogeneous, making power analyses or providing confidence intervals of little use. We therefore choose to report on agreement rates. In addition, compared to other field studies, the study made use of a much larger sample of raters for each case, a mix of transgender health care specialists and nonspecialists, although most of the raters were mental health specialists skilled in detecting distress. This high number of raters was another reason to report agreement rates and no kappa statistics, as other field studies do.^{22,23,32,33} Other future studies could focus on patients presenting to nonspecialty non mental health settings; for example, endocrinology, surgery, or other medical specialties that provide medical care to more heterogeneous gender diverse populations, possibly with less distress. This would ensure more generalizability, although the probable still low prevalence rates of GI/GD would make a design comparable to other field studies a challenge.

Conclusion

In conclusion, the present study showed that the interrater agreement rates for gender identity-related diagnoses can be considered good or very good, regardless of the classification system that was used (ICD-10, ICD-11, DSM-IV-TR, or DSM-5), both for the adolescence/adulthood diagnosis and for the childhood diagnoses. The revisions in the ICD-11 and in the DSM-5 did not change these agreement rates. Clinicians further assessed the utility of the various classification systems as easy to use and few differences between the former, current, and proposed ICD and DSM classifications existed with regard to the ability to make a correct diagnosis. Future work should assess whether these results are generalizable to other settings and should also show whether the reconceptualization of the ICD-11 is helpful in solving controversies and diminishing stigma around gender identity-related diagnoses.

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Address correspondence to:
 Annelou L.C. de Vries, MD, PhD
 Department of Child and Adolescent Psychiatry
 Center of Expertise on Gender Dysphoria
 Amsterdam University Medical Centers, Location VUmc
 PO Box 7057
 1007 MB Amsterdam
 The Netherlands

E-mail: alc.devries@amsterdamumc.nl