CHRISTOPHER FAIN, ET AL vs.

WILLIAM CROUCH, ET AL

LOREN S. SCHECHTER, MD

03/28/2022

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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,

Civil Action No. 3:20-cv-00740
Hon. Robert C. Chambers, Judge

v.

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.

VIDEO CONFERENCE DEPOSITION
OF
LOREN S. SCHECHTER, M.D.
March 28, 2022

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OF
LOREN S. SCHECHTER, M.D.
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Videoconference deposition of DR. LOREN S. SCHECHTER taken by the Defendants under the West Virginia Rules of Civil Procedure in the above-entitled action, pursuant to notice, before Teresa S. Evans, a Registered Merit Reporter, all parties located remotely, on the 28th day of March, 2022.

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PROCEEDINGS

COURT REPORTER: Good morning. My name is Teresa Evans. I am a Registered Merit Reporter.

Today's date is March 28, 2022 and the time is approximately 9:58 a.m.

This is the deposition of Dr. Loren Schechter in the matter of Fain, et al. versus Crouch, et al. This case is venued in the United States District Court for the Southern District of West Virginia at Huntington. The case number is 3:20-cv-00740.

At this time, I will ask counsel to identify yourselves and whom you represent and agree on the record that there is no objection to this officer of the court administering a binding oath to the witness via Zoom.

Please state your agreement on the record, starting with the noticing attorney.

MR. DAVID: Caleb David and Lou Ann Cyrus on behalf of the Defendants, the West Virginia Department of Health and Human

Resources, Secretary Crouch and Commissioner Beane, and we have no objection to the witness being sworn via Zoom or the deposition taking place via Zoom.

MS. HUPPERT: This is Nora Huppert from Lambda Legal for the plaintiffs. Also no objection to being sworn by Zoom.

MR. AUVIL: Walt Auvil for the plaintiffs. No objection.

MS. BORELLi: Tara Borelli for the Plaintiffs. No objection.

MS. SMITH: Avatara Smith-Carrington for the plaintiffs. No objection.

(The witness was sworn.)

LOREN SCHECHTER, M. D. was called as a witness by the Defendants, and having been first duly sworn, testified as follows:

EXAMINATION

BY MR. DAVID:

Q. Doctor, my name's Caleb David, and as you just heard, I represent the defendants in this lawsuit that's been filed by Christopher Fain and Shauntae Anderson, and we're here to

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take your deposition today, and I see from your expert disclosure report that you've had your deposition taken a few times before. Is that right?

A. That's correct.

Q. Okay. Then I'll spare you all the details and rules. If you do misunderstand something or if you can't hear me or Zoom cuts out or something, please let me know. That's always a difficulty. And if you want to take a break at any time, we can do that. That's not a problem.

So are you ready to get started?

A. Yes.

Q. Okay. All right. Can you please state your full name for the record?

MR. DAVID:, I'm sorry, Nora, did you want to --

MS. HUPPERT: Apologies. Not to interrupt. We just wanted to propose really quickly to agree that an objection to form would preserve all form objections without needing specified for the sake of efficiency. Would you agree to that?

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MR. DAVID: Absolutely.

MS. HUPPERT: Thank you very much.

BY MR. DAVID:

Q. Doctor, can you please state your full name for the record?

A. Loren, L-O-R-E-N, Slone, S-L-O-N-E, Schechter, S-C-H-E-C-H-T-E-R.

Q. Doctor, how are you currently employed?

A. I'm currently employed by Weiss Hospital.

Q. And what is your position with Weiss Hospital?

A. Physician.

Q. And what type of physician?

A. Plastic surgeon.

Q. And are you -- do you also have a teaching position as a plastic surgeon at Weiss Hospital?

A. I didn't hear that. That cut out.

Q. I'm sorry. Do you have a teaching role as a physician at Weiss Hospital?

A. I have a teaching role at Rush University. We do teach -- we do have rotating residents from the University of Chicago and from Rush University.

However, my employment will be switching on April 5th to Rush University.

Q. And at Rush University, will you be a physician as well as a professor?

A. That's correct. And Mr. David, I'm sorry, you just cut out a little bit every so often.

Q. Let me -- I'm trying to get rid of e-mail notifications. I think that's the problem. They keep popping up. Okay.

Let's try that again. At Rush University, will you be an attending physician as well as a professor?

A. I currently have a hospital appointment now as an attending physician at Rush, and then I will assume the role of director of their program in gender affirmation surgery as well as a professor of surgery which is pending academic review.

Q. And that program in gender affirmation surgery, how long has that program existed?

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A. I joined the staff at Rush -- I believe it was in August of '20, I believe be -- just before the pandemic.

Q. So in August of 2019 then?

A. I think you're correct. It would be August of '19, yes.

Q. And is that when the program started, when your arrival coincided with the program's beginning?

A. My arrival coincided -- or I guess my arrival began their program in predominantly genital surgery. I believe they had been performing top surgery, meaning mostly mastectomy, prior to my joining.

Q. And when -- and I -- maybe -- I might be misunderstanding you. When you say "program in gender affirmation surgery," are you talking about just the fact that those procedures are being performed, or is there a residency or internship program?

A. The program is housed within the department of surgery under the auspices of plastic surgery. We have rotating residents from plastic surgery. We also have a

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fellowship in gender affirming surgery.
That fellowship started in 2017 initially through Weiss, and I believe we switched the administrative authority in '19 to Rush University.
Q. Okay. So how many residents -- and again, I guess they would be physicians -- full-fledged physicians by the time they got to the fellowship, but how many people have gone through that fellowship program?
A. Four people have completed, and the fifth will start in July of this year.
Q. And the four that have completed, are they now practicing plastic surgery and performing gender confirmation or gender affirmation surgeries?
A. Yes, I believe all have that as part of their practice.
Q. Do you have any idea where those folks are now?
A. One in San Francisco; one in Toronto; one in Philadelphia, and I believe one in New York.
Q. And do you know those individuals'

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names?
A. Alexander Facque, F-A-C-Q-U-E. Rayisa, R-A-Y-I-S-A, Hontscharuk, H-O-N-T-S-C-H-A-R-U-K. Alireza Hamidian, A-L-I-R-E-Z-A, Hamidian, H-A-M-I-D-I-A-N. And David Whitehead, W-H-I-T-E-H-E-A-D.
Q. That was impressive, Doctor, for you to be able to spell all of that. Thank you. So this program has been in existence since 2019. Have you only been accepting one fellow each year?
A. It's been in existence since '17.
Q. Okay.
A. It administratively moved to Rush in '19. We accept one per year. This year, Doctor Hamidian, who is our most recent graduate, had planned to stay through December but was offered a position at Temple University, so we allowed him to leave a bit early.
So we had no fellow from about August of '21 through June of '22. And the fifth person will start July of '22.
Q. And can you just, in general terms,

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tell me what the fellowship actually entails? First, is it a one- or two-year fellowship? And then what it actually entails in terms of procedures that are performed, if there's any research component, anything like that?
MS. HUPPERT: Objection to form.
A. It's designed to be a one-year fellowship. There are both -- there are several components: Clinical components, which involve office-based education; didactics, meaning lectures; operative experience, both pre- and post-operative care in the office as well as in the hospital; clinical research; teaching rotating medical students and plastic surgery residents.
Q. And I know it's a small sample size, but for the four who have completed that fellowship, on average how many procedures, gender affirmation procedures, are they performing during that one-year period?
A. We do about 150 to 200 procedures per year. That may have been lower during the COVID situation, though.
Q. Sure.

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A. And with our Canadian fellow who had some difficulties with border closures related to COVID.
Q. Okay. So in the small sample size of nonCOVID years where people can freely travel without quarantine, it's 150 to 200 procedures in that one fellowship year.
A. That is correct.
Q. Okay. Now, obviously -- you are board certified in plastic surgery, correct?
A. I am.
Q. Okay. And is there a subspecialty board certification in gender affirmation surgeries?
A. Not through the American Board of Medical Specialties.
Q. Okay. Is there one that's -- that's separate from the American Board of Medical Specialties?
A. Not a certification.
Q. Okay. Is there some other type of certificate or -- I don't know what else, but is there some other type of certificate in gender affirmation surgery?

MS. HUPPERT: Object to form.
A. Each of the fellows receives a certificate from the institution indicating successful completion of the program.
Q. Okay. Are you aware of whether or not the American Board of Medical Specialties is developing a board certification in gender affirmation surgeries?
MS. HUPPERT: Object to the form.
A. To my knowledge, they are not.
Q. Ask you some of the generic doctor questions that you've probably been asked before. But you're licensed to practice medicine, correct?
A. I am.
Q. And in the State of Illinois?
A. Yes.
Q. And you have -- do you have any restrictions on your license?
A. No.
Q. Have you ever -- has your license ever been subject to disciplinary -- to discipline in any way from any board of -- any licensure board? Sorry.

A. No.
Q. Okay. Have you ever had a malpractice suit filed against you?
A. Yes.
Q. Okay. And did that -- well, first, when was that suit filed?
A. I've had one probably in -- a case from '03. I don't remember when it was filed. It was dismissed.
I have an ongoing case from 2015. The case may have been filed in '16 or '17. I'm not sure.
Q. The case in 2003, did that involve a patient undergoing gender affirmation surgery?
A. No.
Q. And the case in 2015, did that involve a patient undergoing gender affirmation surgery?
A. No.
Q. Now, looking at your report where you're talking about your background, you state that there -- that you've performed over 1500 gender affirmation surgeries. Is that correct?

A. Yes.
Q. Okay. And you also state that for at least the past five years, you've been performing approximately 150 gender confirmation procedures every year. Is that right?
A. Yes.
Q. Okay. So just doing quick math, it seems to me that over the last five years, there's been an uptick in the amount of gender confirmation surgeries that you're performing. Is that true?
MS. HUPPERT: Object to form.
A. I would say the numbers over the last five years have been fairly consistent.
Q. Okay. So if you're looking at the last 5 years compared to the prior 22 years of practice -- because you've been practicing for 27 years; is that right?
A. I completed my residency in '99. I did my fellow -- started my fellowship in '99, also with getting attending privileges. And I began training in '94.
So I've been involved - whether

as an attending, a fellow, a resident - for over -- and prior to that, as a student. But as a physician, going on 28 or 29 years.
Q. Okay. And I'm referencing Paragraph 7 of your initial report, and it says, "I have been performing gender confirming surgeries for more than 27 years." Is that an accurate statement?
A. That is.
Q. Okay. And just looking at the math, if you've done now -- you say over 1500, but I'm using 1500 as a benchmark just so that I'm being clear with you.
1500. But if you've done 150 procedures each year for the past five years, that's half of the 1500 procedures. So what I'm asking, in the last five years, has there been a significant amount of gender confirmation surgeries that you've performed compared to earlier in your career?
A. No. The 1500 is a very conservative number.
Q. Okay. So in 2000, the year 2000, were you performing more or less gender

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confirmation surgeries than you did in 2018?
MS. HUPPERT: Object to form.
Q. Less than 2000?
A. I was performing less.
Q. Okay. And what about 2010 versus 2018? Which did you perform more gender confirmation surgeries?
A. I would estimate around 2010, that number is closer to the number referenced in my report.
Q. Okay. So in 2010, were you also performing approximately 150 gender confirmation surgeries per year?
A. I don't recall the exact number, but close -- likely closer to the 150.
Q. Okay. So during your career, from the time that you finished your training until 2010, there was an increase in the number of procedures that you performed and it's sort of been stable since that time.
MS. HUPPERT: Object to form.
A. I'm sorry, can you -- can you ask that again?
Q. Sure. So from the point that you

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finished your training to 2010, there was an increase in the number of procedures that you were performing annually, but since 2010, it's somewhat stable.
MS. HUPPERT: Object to form.
A. I can't say that it was specifically 2010 that that number increased.
Q. Okay. At what point did that number increase?
A. Well, there was an increase from 2000 -- there's been an increase since 2000 --
Q. So --
A. -- most likely every year.
Q. I'm sorry. I didn't mean to interrupt you. So has it been a gradual increase?
A. There was a gradual increase. I would estimate 2008 to 2010, the rate of increase increased.
Q. Okay. I think I understand. Okay. So your -- and Paragraph 7 of your report also says currently 90 percent of the patients in your practice are transgender individuals seeking gender confirmation surgeries. Is that an accurate statement?

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A. Yes.
Q. In the year 2000, what percentage of your patients were transgender individuals seeking gender confirmation surgeries?
MS. HUPPERT: Object to form.
A. I would estimate probably on the order of about 10 percent.
Q. And what do you attribute to either the increased number of procedures that you're performing or that people are coming to you specifically? What do you attribute to that change in your practice?
MS. HUPPERT: Object to form.
A. I'm sorry, can you rephrase?
Q. Sure. Absolutely. So do you -- what do you believe is the reason for the change in your practice from 10 percent of your patients being transgender individuals seeking gender confirmation surgeries in the year 2000 to 90 percent of your patients being transgender individuals seeking gender confirmation surgeries in the year 2022?
MS. HUPPERT: Object to form.
A. Well, it's been a specific area of my

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practice and expertise.
Q. So over the last 20 years, you have developed a specific area of practice to the point that you're now teaching in that area of practice. Correct?
A. That is correct.
Q. Okay.
A. And I was teaching in that area and have been teaching in that area since 2000.
Q. Okay. So in the year 2000, you were also teaching in the area of gender affirmation or gender confirmation surgeries?
A. Yes. I've had rotating plastic surgery residents with me for virtually my entire professional career, whether from University of Chicago, University of Illinois, Loyola, Rush, general surgery residents from the University of Illinois, medical students from a variety of medical schools throughout Chicago, as well as visiting students and residents from across the country and visiting surgeons from all over the world.
Q. And at that time, prior to beginning the program that you talked about starting in

2017 at Weiss and moving over to Rush in 2019, were -- in that period of 2000 to 2016, were you providing instruction when patients came in and you were performing those surgeries, or was there a specific program that you were providing education for gender affirmation surgeries?

MS. HUPPERT: Object to form.

A. It's been a part of my practice as an attending since '99. So it's been a part of the instruction I provide in plastic surgery.

Q. Okay. So it was a part of the general education that you were providing to residents when they rotated through your program, but there wasn't a specific program dedicated to it.

A. My practice -- gender affirmation surgery has been a component of my practice since '99.

Q. You did not have a fellowship program devoted to gender affirmation surgeries until 2017. Is that a true statement?

A. The fellowship which began in 2017 was dedicated to post-residency graduates in

plastic surgery. Prior to that, residents in not only plastic surgery, but also urology, general surgery, gynecology, family medicine all rotated with me to gain exposure and education in the field of gender confirming surgery.

Q. And all of those specialties that you just mentioned - plastic surgery, urology, etc. - those all have dedicated residency programs. Correct?

A. Those were individuals who are in dedicated residency programs in the affirmation specialties who then rotated with me.

Q. Was there a residency program in gender affirmation surgeries prior to 2017?

MS. HUPPERT: Objection to form.

A. Gender affirmation surgery under a variety of different names has been part of plastic surgery training as it was for me, not only plastic surgery, but part of my under -- my medical education, my doctor of medicine degree, in the '90s.

So it's been an accepted part of

residency training certainly since I was a resident.

Q. Could you do a residency solely in your affirmation surgery prior to 2017?

MS. HUPPERT: Objection to form.

A. Gender affirmation surgery - depending on the procedure - is performed by different specialties: Urology, plastic surgery, gynecology, ear, nose and throat, otolaryngology. It's been a part of plastic surgery -- plastic surgery training and education, based on my personal experience, since the '90s.

Q. Again, my question was simply: Could you do a residency, specifically a residency program saying -- a residency program in gender affirmation surgery only? Is that something you could do in 2017 -- before 2017?

MS. HUPPERT: Objection to form. Asked and answered.

A. We typically don't do residency programs in particular procedures. So for example, I can't do a residency only in breast reconstruction, although that's part and

parcel of a plastic surgery residency.

So similar to procedures like breast reconstruction or cleft lip, gender affirming surgeries were part of the standard training program in plastic surgery.

Q. Okay. Recognizing that it was part of your -- or part of the standard rotation and it's something that they learned, it's not a -- its own specific specialty. Is that correct?

A. Similar --

MS. HUPPERT: Objection to form.

A. Similar to other procedures: Cleft lip, breast reconstruction, breast augmentation, mastectomy. Gender affirming surgery is part and parcel of plastic surgery training.

Q. So was the answer yes, it doesn't have its own specific residency, but it is -- similar to other procedures, it is a part of the training that individuals receive in a plastic surgery residency?

MS. HUPPERT: Objection to form.

A. The answer is: It is consistent with

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other procedures performed within plastic surgery.

Q. I mean, I can keep going all day. It's just a simple question. Is there a specific residency program that focuses only on gender affirming surgeries?

MS. HUPPERT: Objection to form.

A. As with other procedures such as cleft lip, cleft palate, breast reconstruction, mastectomy, lower extremity reconstruction, it's part and parcel of the plastic surgery training program included in the core curriculum, tested on the written boards and tested on the oral board.

Q. So can you just -- you're not going to answer that question?

MS. HUPPERT: Objection.

A. I believe I did.

Q. It's -- I'm fine with you providing an explanation. I just want an answer to the question. Is there a specific residency program for gender affirming surgeries?

MS. HUPPERT: Objection.

Counsel, Doctor Schechter's answered your

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question.

MR. DAVID: He hasn't.

MS. HUPPERT: He has.

A. It is consistent with other procedures I just discussed.

Q. Okay. All right. Well, we'll talk to the judge about that.

Okay. So anyway, you have stated that you have a practice that includes 90 percent of patients who are transgender individuals seeking gender confirmation surgeries, correct?

A. Approximately 90 percent of my practice involves gender affirming or gender confirming surgery, yes.

Q. Okay. And what percentage of your patient population resides in the State of Illinois?

A. I would estimate 50 percent. That may be plus or minus a bit.

Q. And what percentage of your patient population is Medicaid beneficiaries?

A. That, I can't answer. The bill is -- I don't have specific knowledge to each

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patient's third party coverage.

Q. Do you accept Medicaid for your procedures?

A. Yes.

Q. When did you begin accepting Medicaid?

A. Illinois -- the State of Illinois began covering it perhaps within the last two to three years. And prior to that, our office would often work out single case agreements, whether between Illinois or neighboring states.

Q. And tell me what you mean when you say "single case agreements."

A. So if an insured's company doesn't necessarily have a provider who's able to perform them but the procedure is covered, they may have a con -- an individual contract - in this case with me or my office or my employer - to cover the procedure.

Q. In the case of Illinois Medicaid prior to 2020 - which at least by my research is when they started covering these procedures - did you ever perform a procedure on an Illinois Medicaid beneficiary for gender

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confirming surgery and they ended up paying for it?

A. It is possible, but I'd have to -- I'd have to check records to give a definitive answer.

Q. And again, understanding that you're not certain about the answer, if that happened, would that have been done under a single case agreement?

MS. HUPPERT: Objection to form.

A. Possible, but again, I'd have to check with the records to get a definitive answer.

Q. Are you aware that the Illinois licensure website for the Board of Medicine states that you do not accept Medicaid patients?

A. No.

Q. Okay. And it also states that you do not accept patients through the All Kids program? Is that accurate?

A. That, I don't know. But I do know we accept Medicaid.

Q. Okay. So let's talk a little bit more about your practice. In addition to the 90

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percent of patients that you're seeing for gender affirming surgeries, you're also seeing patients for Botox, correct?

A. I do, although less so for Botox. Injectables isn't a major part of my practice.

Q. Okay. And you have patients who receive JUVEDERM?

A. Again, that's an injectable, which isn't a major part of my practice. But on occasion, I do inject.

Q. Okay. Chemical peels?

A. Similar. Not a significant portion of my practice any longer.

Q. Liposuction?

A. Yes.

Q. Fat injections?

A. Yes.

Q. Dermabrasion?

A. Similar to the injectables and chemical peel. And those procedures - for example, liposuction, lipofilling which is also known as fat grafting - are also performed for transgender individuals.

Q. Now, do -- I understand it's not a

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large portion of your practice, but do you perform Botox injections for facial wrinkles?

A. Yes.

Q. Okay. And what percentage of your patients being treated with Botox injections for facial wrinkles are Medicaid beneficiaries?

A. I wouldn't -- I wouldn't know that answer.

Q. If that -- is Botox injections for facial wrinkles something that is reimbursable under Medicaid?

A. I would say it would likely depend upon the reason that was being conducted. If someone had a medical condition for which Botox would be a treatment, then it could be covered.

I can't speak specific to the coverage - for example, of Illinois Medicaid - but to third party coverage in general.

Q. And my question was specific to facial wrinkles, Botox injections for facial wrinkles. Is that covered by any insurance?

A. Facial wrinkles -- Botox may be used

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for facial wrinkles or medical conditions. For example, in a case of hemifacial paralysis, one side of the face may wrinkle; the other may not.

Q. But in that instance, you're trying to treat the hemi paralysis, correct, not just the wrinkles?

A. No, we're not treating the paralysis; we're treating the appearance. Paralysis can be treated by nerve grafts, muscle transfers, etc.

Q. Okay. And you do perform Botox injections for medical conditions like chronic migraines, overactive bladder. Correct?

A. It is performed for that. I typically don't use it for migraines or overactive bladder.

Q. Okay. Are you aware that your website specifically states that you do that?

A. Migraines or overactive bladder?

Q. Yes.

A. If you'd show me that, I'd like to see that.

Q. Okay. Are chemical peels covered by

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Illinois Medicaid?

A. Chemical peels, again, can be used for reconstructive or aesthetic reasons, and once again, similar, for example, to procedures we perform in gender affirming surgery and when performed on the basis of a medical condition, can be covered and often are covered by third party payers.

Q. Under what circumstances are chemical peels covered by third party payers?

A. There can be situations such as scarring, post-traumatic scarring, for example.

Q. And what about laser resurfacing, is that something that is covered by Illinois Medicaid?

A. A similar answer to the previous questions. It's not the procedure itself that dictates necessarily what's covered; it's the basis upon which the procedure is performed. We often have, as plastic surgeons, a variety of tools in our parliamentarium, so to speak, and we apply those tools to a variety of clinical conditions.

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Q. Okay. What clinical conditions have you treated with chemical peels?
A. Facial scarring. So there may be scarring related to prior traumatic events.
Q. And that facial scarring is cosmetic, correct?
MS. HUPPERT: Objection to form.
A. No, once again, scarring can be the result of trauma, so when performed, again, based on -- for the reason -- it depends on the reason for which it's performed.
If it's performed, for example, to treat a traumatic condition, then face -- then chemical peel, laser resurfacing, may be reimbursable by third parties.
Q. Okay. What percentage of your patients receiving Botox injections for facial wrinkles have their expenses for those procedures reimbursed by a third party payer?
A. I'm sorry, for Botox?
Q. For Botox injections for facial wrinkles.
A. Less than 10 to 15 percent.
Q. Would that be a similar statistic for

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the use of JUVEDERM?
A. Yes, probably less than 10 percent.
Q. And what about the percentage for chemical peels?
A. I would say probably less than 30 -- probably about a third or so.
Q. Okay. Same question for laser resurfacing.
A. I no longer do laser resurfacing myself.
Q. Okay. Dermabrasion?
A. Again, probably about a third. And dermabrasion may be conditions like rinophyma, traumatic scarring, ice pick scarring from acne, for example.
Q. So the -- so dermabrasion for acne scarring is something that is reimbursable?
A. It would depend on the insurer.
Q. And does that -- and this is going to end up jumping ahead a little bit. But does that mean that some of those insurers are deeming the dermabrasion for acne scarring to be medically necessary and some aren't?
MS. HUPPERT: Objection to form.

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A. The -- we have had dermabrasion for acne scarring - we call ice pick scarring - covered by third party payers.
Q. And did you make a determination at that time that the dermabrasion for ice pick scarring was a medically necessary procedure?
A. If it was covered by a third party payer, I would have likely written both. Whether or not it was covered by the third party payer, I may have -- I may have written a letter to the insurer indicating or discussing the medical necessity.
Q. And do you believe that dermabrasion for ice pick scarring for acne is a medically necessary procedure?
A. It would depend on the individual circumstances.
Q. And under what circumstance would that be medically necessary?
MS. HUPPERT: Objection to form.
A. I would have to have an individual case, but it could affect both form and function for the individual.
Q. So when you're talking about this ice

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pick scarring, you're talking about facial scarring?
A. I'm talking about scarring -- well, it could occur elsewhere in the body, not necessarily -- and not only the face.
Q. Okay. Is it most prominent on the face?
A. As far as I've treated it, it would be most likely on the face, although it can be used in other body -- in other anatomic locations.
Q. Okay. And you have seen ice pick scarring from acne that was severe enough to affect the form and function of the individual?
A. Yes.
Q. Okay. And in what way did it affect the form and functioning of the individual?
A. It could distort facial features. It could lead to disfigurement. Part of the function of the face is to look like a face. So if it causes distress, then it's possible it may -- may be considered medically necessary.

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Q. Okay. So you're -- I'm trying to make sure that I understand this entirely. If the facial scarring is severe enough that it distorts facial features or can be considered a disfigurement or causes distress, then dermabrasion could be medically necessary to correct that.

MS. HUPPERT: Objection to form.

A. Dermabrasion can be considered medically necessary. As to individual circumstances, I'd have to see and evaluate the case.

Q. And I'm trying to understand whether it's the -- is it the distress that is caused to the individual that would make the procedure medically necessary?

A. Again, it would depend upon the particular case, the extent of the scarring, where it was located, the impact on the individual.

Q. All right. Can you describe for me a circumstance where that would be significant enough to be medically necessary?

MS. HUPPERT: Objection to form.

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A. Yes.

Q. Please do.

A. If the scarring caused pain, distortion of the eyelid, for example, or other functional implications -- other functional reasons, it could be considered medically necessary.

Q. So when you talk about distortion of the eyelid, you're meaning if it is something that actually affects the eyelid from functioning the way that it was designed to do.

A. It may be either form or function.

Q. So when you say "form or function," you mean formed -- is that in reference to appearance?

A. Yes.

Q. Okay. And appearance alone, without the effect on function, that would be sufficient to make it medically necessary?

A. It would depend, again, on the particular case.

Q. Okay. And in that particular case, would it be required that the patient have

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significant mental or emotional distress for it to be medically necessary?

MS. HUPPERT: Objection to form.

A. I'm sorry, can you repeat that?

Q. Sure. So in the case of an individual that has distortion of the eyelid that is in appearance only and not in function, would it require the patient to experience significant mental or emotional distress for dermabrasion to be medically necessary?

MS. HUPPERT: Objection to form.

A. It would depend upon not only the particulars of the case, but the ability of that person, for example, to interact within society not feeling stigmatized or ostracized.

So for example, in a burn case where there's substantial scarring and the individual is inhibited from interacting normally in society, whether chemical peel, dermabrasion or scar revision, all of which could be considered medically necessary.

Q. So in the case of someone who has ice pick scarring to the eyelid as a result of acne and it is in appearance only - does not

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affect the function of the eyelid - it can still be medically necessary for that patient to undergo microderm -- excuse me, dermabrasion, if the ability of the person to operate within society is affected.

MS. HUPPERT: Objection.

A. One would not --

THE DEPONENT: I'm sorry.

A. One would not typically have ice pick scarring to the eyelid; it would be -- or could be a case into the eyelid.

Q. So in the case of someone who has ice pick scarring adjacent to the eyelid that does not affect the function of the eyelid, that person could be medically -- it could be medically necessary for that person to undergo dermabrasion if it affects their ability to operate within society.

MS. HUPPERT: Objection to form.

A. So part of the function of a face is to look like a face. And conditions that interfere with that and then require medical and -- surgical interventions or medical interventions, can be considered medically

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necessary.
Q. Okay. At what point is a facial scar so significant that it requires medical intervention?
A. I would have to see a specific case.
Q. What about if someone has a nonmalignant mole that they believe causes a stigma? Would that be medically necessary to remove that mole?
A. I wouldn't know that it was necessarily nonmalignant if it wasn't biopsied.
Q. I'm saying, as a hypothetical, is a nonmalignant mole - but it causes someone distress because they have a stigma in society; they get made fun of because they have that mole and it causes them distress - is it medically necessary to remove that mole?
MS. HUPPERT: Objection.
A. I can't accept that hypothetical, because I wouldn't be able to know if it was nonmalignant if it wasn't biopsied.
Q. Okay. If you biopsy it and it's determined to be nonmalignant, is it medically

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necessary to remove that mole?
MS. HUPPERT: Objection to form.
A. Again, it would depend on the specific circumstances.
Q. Under what specific circumstances would it be medically necessary to remove that mole?
MS. HUPPERT: Objection to form.
A. A potential for malignant degeneration.
Q. Any other circumstances?
MS. HUPPERT: Objection to form.
A. Potential for progression: For example, increase in size, bleeding, itching, ulceration. Those would be some, probably not an exhaustive list.
Q. Okay. Does an exhaustive list include for the alleviation of stigma from society?
MS. HUPPERT: Objection to form.
A. Yes, it can. So there may be people born with Port-wine stains who undergo -- which are facial lesions, blotches on the face, that may undergo laser intervention.
Those lesions may be benign, but

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also may receive coverage for medical intervention.
Q. So specific to a facial mole, is alleviating distress caused by the stigma from society a reason for medical necessity for removal of the mole?
A. Again, it would depend on the characteristics of that mole.
Q. And as we discussed, you biopsied it -- and I -- let's -- I'll try to rephrase this.
Is the alleviation of distress caused by the stigma of society alone - that alone - a reason for medical necessity for removal?
A. I would have to know more than where it's located - the size and so forth - to be able to answer that question. The biopsy result.
Q. Okay. And again, my question is: This specific circumstance is a nonmalignant mole that is not progressing, that is not bleeding, that there is no other reason except for the alleviation of distress to remove this

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mole. Is that sufficient for medical necessity?
MS. HUPPERT: Object to form.
A. Again, you're asking a medical condition that isn't necessarily a complete hypothetical. I don't know the biopsy results. I don't know that it won't progress. So I can't answer it without more specific information.
Q. Can you point me to any piece of medical literature that will tell me that removal of a mole is medically necessary if it is done solely for the purpose of alleviating stress from society's stigma against that mole?
MS. HUPPERT: Object to form.
A. Moles may be removed for a variety of reasons, and the reason you stated may be one of those reasons.
Q. And my question was: Can you point me to any medical literature that would support that you -- it is medically necessary to remove a mole for the sole purpose of alleviating distress caused by the stigma of

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that mole?
MS. HUPPERT: Object to form.
A. That may be considered medically necessary by the physician, depending on the characteristics of the mole.
Q. And my question again was: Can you point me to any medical literature?
MS. HUPPERT: Object to form.
A. Most medical literature doesn't discuss third party coverage of lesions. We perform procedures based on the medical conditions. There's always -- there is an indication for any procedure that we perform.
Medical literature typically doesn't list which procedures are medically necessary -- or I should say medical literature, the focus of medical literature, may not be under the medical necessity for the procedure but on the indications for the procedure.
Q. And again, can you point me to any medical literature that would state that if the sole indication for the procedure is to alleviate distress from stigma, that it is

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medically necessary to remove a mole?
MS. HUPPERT: Objection to form, asked and answered.
A. Again, as with many procedures, the medical necessity of a particular procedure will depend upon the specifics of the case.
Q. So please go ahead and point me to the medical literature that would support that.
MS. HUPPERT: Objection to form, asked and answered.
A. Again, consistent with many medical procedures, the medical necessity would depend upon the specifics of the case.
Q. Okay. What is the universe of literature that you're aware of that discusses the medical necessity of mole removal?
MS. HUPPERT: Objection to form.
A. Medical textbooks, surgical textbooks, in terms of literature. Journals, communications with colleagues, conferences, teaching seminars.
Q. And can you name any that are specific to the removal of moles to alleviate distress caused by the stigma of the mole?

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MS. HUPPERT: Objection to form. Asked and answered.
A. Again, the typical discussion regarding moles does not relate to whether or not it's medically necessary, but rather the indication, the medical indication.
Q. Okay. So the answer is you are not able to name a single source of any medical literature that would support the removal of a mole to alleviate the distress caused by stigma of that mole.
MS. HUPPERT: Objection to form. Asked and answered. Mischaracterizing the testimony.
A. The answer is that medical literature typically focuses on the medical indications. The medical necessity would depend upon the particulars of the case.
Q. Okay. Please list all the medical literature that you are aware of that states that it is medically necessary to remove a mole to alleviate distress caused by stigma of that mole.
MS. HUPPERT: Objection to form.

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Asked and answered.
A. Once again, similar to other procedures, the focus is on typically indications for removal of the procedure. The medical necessity of any case depends upon the judgment of the physician in their interaction with the individuals seeking treatment.
Q. And how many pieces of medical literature -- how many articles did you just list?
MS. HUPPERT: Object to form.
A. In reference to?
Q. How many -- in response to my last question, how many articles did you list?
MS. HUPPERT: Object to form.
A. And your last question was what?
Q. To -- I asked you to please list all of the medical literature that would support the removal of a mole for the sole purpose of alleviating distress caused by stigma.
MS. HUPPERT: Object to the form. Asked and answered.
A. Once again, medical literature discusses typically indications. The focus --

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the decision of medical necessity depends upon the individual circumstances of a case.

Q. Okay. And so in response to my question that asked you to list articles, how many articles did you list?

A. Once again, medical necessity depends upon the specifics of the case and it is a determination between the physician and the individual seeking care.

Q. Okay. So my question is: How many articles did you list?

MS. HUPPERT: Object to form. Asked and answered.

A. Once again, the determination of medical necessity depends upon the specifics of a case. And without much more specifics, I can't answer that hypothetical.

Q. Okay. Well, that wasn't a hypothetical. It was "How many." So how many, is the question - the number - how many did you list?

MS. HUPPERT: Object to form. Asked and answered.

A. You're referencing a case, or a

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clinical situation, without providing complete information.

Q. I did provide -- what additional do you need when I say the sole purpose, the only purpose, the singular purpose, is to alleviate distress caused by stigma related to that mole. What additional information do you need?

MS. HUPPERT: Sorry for interrupting. Object to form.

A. I would need to see the biopsy result; I'd need to see the location, the size and the specific characteristics, as well as the impact on the individual.

Q. Okay. Knowing that you're not going to answer that question, we'll move on. Do you diagnose gender dysphoria?

A. I do not.

Q. Okay. And you are not a mental health professional; is that correct?

A. I'm a plastic surgeon.

Q. And you are not a mental health professional; is that correct?

MS. HUPPERT: Objection. Asked

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and answered.

A. I am a licensed physician and surgeon with board certification in plastic surgery.

Q. Are you a psychiatrist?

MS. HUPPERT: Objection.

A. No.

Q. Are you a psychologist?

A. No.

Q. Did you complete a residency in psychology?

A. No.

Q. Did you complete a residency in psychiatry?

A. No.

Q. Do you have fellowship training in psychiatry?

A. No.

Q. Do you have training in child and adolescent development psychology?

A. My area of specialty is in plastic surgery. I do work with colleagues who have specialty training and who are child and adolescent psychologists.

Q. Do you yourself have that training?

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A. I'm sorry, which training?

Q. The training in child and adolescent development psychology.

A. Well, as part of medical school, child and adolescent development is part of medical school curriculum. I am not boarded in child and adolescent psychiatry.

Q. My question was: Do you have training in child and adolescent developmental psychology?

A. Well, child and adolescent development, including psychology, is part of a medical school curriculum.

Q. Okay. So other than your courses in medical school, you have no additional training in child and adolescent developmental psychology. Is that a true statement?

A. While I am not a child and adolescent psychologist, I do work with and attend lectures, seminars, educational events involving children and adolescent psychology and psychiatry.

Q. Do you consider yourself to be trained and professionally competent in using the

American Psychiatric Association's DSM-V to make child and adolescent mental illness diagnoses?

MS. HUPPERT: Object to form.

A. That is not part of my clinical practice.

Q. And same question for adults. Do you consider yourself to be professionally competent and trained at using the DSM-V for adult psychological or psychiatric diagnoses?

MS. HUPPERT: Object to form.

A. That is not part of my clinical area.

Q. Okay. And when you say it is not part of your clinical area, you mean you are not professionally competent to make those diagnoses. Correct?

A. It means that, once again, that while I'm not a -- either a child or adult psychologist or psychiatrist, I do work with professionals in that field; I do attend and participate in educational seminars with those individuals; I write literature with those individuals.

I do not practice either child

and adolescent psychology or psychiatry or adult psychology or psychiatry.

Q. And you don't make diagnoses in adult or child psychology.

MS. HUPPERT: Objection to form.

A. I do not make diagnoses in those areas.

Q. Do you have any training in development of health insurance guidelines?

A. I have training in guideline development, which are used by insurance companies. And I've worked with various insurance companies to help develop guidelines.

Q. Have you performed any research relating to what must and must not be covered by health insurers?

A. I typically -- my involvement is typically along the lines of helping them to develop coverage policies, not research -- I would say my involvement is helping develop coverage -- coverage policies.

And there is research involved with that.

Q. What insurance companies have you worked with to develop coverage policies?

A. So I'm under an NDA for some of those.

Q. Are there some that you're not under an NDA for?

A. I believe the specific insurance companies, I'm under an NDA, all the specific insurance companies. In a more general sense, through my work through the Global Education Institute at WPATH, we've been involved with educational events through the State of -- through the State of California and a number of insurance providers.

Q. So are you able to testify without violating an NDA as to any specific insurance company that you are assisting with developing coverage guidelines?

A. I don't believe so outside of the general statement that through my work at WPATH and the Global Education Institute, we're working with between 30 to 40 insurance carriers within the State of California.

Q. Are you working with any insurance carriers in the State of West Virginia?

A. Not to my knowledge. But I would say I can't necessarily speak to all the various arrangements an insurance company would have or

practice in which state.

Q. Do you hold yourself out to be an expert in the requirement of what must be covered under the Affordable Care Act?

A. As a practicing physician on a day-to-day basis, I address issues related to insurance coverage, whether approvals of coverage, denials of coverage, appeals, peer reviews, etc.

Whether they're specific or not to the Affordable Care Act would depend on the carrier.

Q. And I'm simply trying to find out if you are going to testify in this case that you have reviewed the specific provisions of the Affordable Care Act that you believe are applicable and you're going to say that West Virginia law violates the Affordable Care Act.

Is that something that you're going to testify to in this case?

MS. HUPPERT: Objection to form.

A. So my testimony is related to the categorical exclusion in the various cases. I do have knowledge, as a practicing physician - both in my clinical work as well as administrative work - in issues pertaining to insurance coverage, denials

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and appeals.
Q. So for this case, have you specifically looked at provisions of the Affordable Care Act to determine whether West Virginia's -- West Virginia Medicaid's policy violates those provisions?
MS. HUPPERT: Objection to form.
A. I have not looked at the Affordable Care Act specific to this case. I have looked at the Affordable Care Act and have written about the Affordable Care Act and gender affirming surgery.
Q. Okay. And what publications do you have regarding the Affordable Care Act and gender affirming surgery?
A. There is a publication that -- I believe it's been out already in the Journal of Plastic and Reconstructive Surgery. It should be on my CV, so if you had it, I can direct you to it.
It's possible it's in print, but I believe it's been published.
Q. We'll come back to that later.
MR. DAVID: We've been going for a little over an hour. Does anyone want to take a five-minute break?
MS. HUPPERT: I'm happy to go with

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whatever Doctor Schechter prefers.
THE DEPONENT: Sure. Let me just make a quick rest stop and then come back.
(A recess was taken after which the proceedings continued as follows:)
BY MR. DAVID:
Q. Doctor, before we took a break, we were talking specifically about insurance, and you used the term "categorical exclusion." And I wanted to first ask you what that means by you.
A. The denial - in my case - of the gender affirming services, the across-the-board denial of services.
Q. And do you believe that West Virginia Medicaid has a categorical exclusion for treatment for gender dysphoria?
A. I'm looking at it from the perspective of gender affirming surgery, and I believe that there is a exclusion for - although I don't believe the term "gender affirming surgery" is used; a different term is used - for gender affirming surgical services.
Q. Do you know whether West Virginia Medicaid covers mental health care for gender dysphoria?

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MS. HUPPERT: Objection to form.
A. I do not.
Q. Okay. Do you know whether West Virginia Medicaid covers hormone therapy for individuals who are transgender?
MS. HUPPERT: Objection to form.
Object to form, excuse me.
A. I do not.
Q. And have you reviewed the specific what you're calling a categorical exclusion within West Virginia Medicaid's policy?
A. I have seen, I believe, what's the West Virginia Medicaid policy.
Q. Okay. And you believe that that is a categorical exclusion as to gender affirming surgeries.
A. I believe the term used is something such as "sex transformation" or something along those lines.
Q. And again, your understanding is that the West Virginia Medicaid's policy has a categorical exclusion on the category of gender affirming surgery.
A. In my review -- and again, I'll use the

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term "gender affirming" and I believe what was used, "sex transformation," to -- I'll use them as a synonym in this case.
But it is my understanding that gender affirming surgeries are not covered under the West Virginia Medicaid.
Q. And how did you obtain that understanding?
A. I reviewed -- I reviewed, I believe, three West Virginia Medicaid policies.
Q. Okay. Did you review the managed care organization's specific health plans?
A. I believe these were three Medicaid policies that may have been in conjunction with other carriers -- for example, Aetna, and two others.
Q. So you reviewed -- was it Aetna, the health plan -- I'm forgetting the other one right now. But you had reviewed them and they appeared to be -- and we'll talk about the Aetna one specifically.
But there appeared to be a document that was jointly prepared by Medicaid and Aetna, or a document that was prepared by Aetna following Medicaid guidelines?
MS. HUPPERT: Objection to form.

A. I can't speak to how it was prepared. It came to me simply as, I believe, Medicaid/Aetna. So I don't know who is responsible for the preparation.

Q. And do you recall what the language was in the Aetna/Medicaid document that you reviewed?

A. I recall a term "sex transformation." Again, I believe that was the term. It may have been a different or similar term. And I believe that there was an exclusion or that those procedures were not covered by -- by that plan.

Q. And when you read that, what specific procedures did you believe that meant were not covered?

MS. HUPPERT: Objection to form.

A. I believe, as I said, the term was "sex transformation." I'll use a more appropriate term of "gender affirming" or "gender confirming" surgeries.

Those are typically a constellation of procedures that include top surgery, so typically chest or breast, genital surgeries, in addition to, for example, a hysterectomy, oophorectomy, orchiectomy.

Q. And when you reviewed that policy, did you believe that those procedures were entirely excluded or -- excuse me, or not covered for transgender patients or for people with gender dysphoria?

MS. HUPPERT: Objection to form?

A. So it would typically only be transgender individuals who would seek to access those interventions.

Q. Well, for instance, in your report, you frequently mention that individuals with breast cancer receive double mastectomy. That's a common occurrence for an individual with cancer, correct?

A. That can be, yes, one of the options, as -- there may be others.

Q. Did you see anything in any of the insurance policies that you reviewed that said if a individual has breast cancer and a double mastectomy is the procedure that is recommended, that the transgendered individual cannot undergo that procedure, it's not covered?

MS. HUPPERT: Objection to form.

A. So again, I'm -- sex transformation procedures would only be done for transgender

individuals.

Q. Okay. What if a cisgender individual wanted one of those procedures?

A. Which procedure?

Q. A -- we'll do a top surgery. What if a cisgender individual requested a top surgery from -- requested prior approval for coverage for a top surgery from West Virginia Medicaid?

MS. HUPPERT: Object to form.

A. And again, I would need to know more about the situation. "Top surgery" meaning --

Q. A -- we'll say a double mastectomy.

MS. HUPPERT: Object to form.

A. Cisgender individuals may undergo double mastectomies for a variety of indications: A predisposition, for example, to breast cancer. So an individual, cisgender woman - or for that matter, a cisgender man - may have a genetic predisposition, a strong family history.

Mastectomy may be one of the treatment options open to them.

Q. And is there anything that you reviewed that would suggest to you that in those same situations for transgender individuals, that those

coverages are not available to them?

MS. HUPPERT: Object to form.

A. So again, the sex transformation -- again, I apologize. I don't like that particular term, but we'll use, I believe, what's in it. Sex transformation would only be performed for a transgender individual.

A cisgender individual -- at least I haven't had that experience in my practice, to seek a, quote, sex transformation procedure.

Q. Are you aware of West Virginia Medicaid denying coverage for a double mastectomy for someone with cancer because they are transgender?

MS. HUPPERT: Objection to form.

A. Again, my issue is the exclusion or the lack of coverage for sex transformation procedures, which again, are only performed on transgender individuals.

Q. So I can ask the question again. Are you aware of West Virginia Medicaid denying coverage to an individual with cancer, noncoverage for a double mastectomy, for an individual with cancer because they are transgender?

MS. HUPPERT: Object to form.

A. So I wasn't asked to review the document for cancer coverage or oncologic services. I'm looking at the exclusion for sex transformation, which again is only performed on transgender individuals.

Q. So the answer is no, you are not aware of that situation occurring.

MS. HUPPERT: Objection to form.

A. No, the answer is: I didn't review the documents specific to oncologic services.

Q. Okay. Please list all individuals you are aware of who were denied coverage for a double mastectomy when they had a diagnosis of cancer because they are transgender.

MS. HUPPERT: Objection to form. Asked and answered.

A. Again, my focus was on the exclusion of sex transformation procedures which are only performed upon individuals who are transgender.

Q. And so therefore you did not review or determine whether transgender individuals have been denied coverage for double mastectomy for cancer diagnosis.

MS. HUPPERT: Object to form.

A. My review was for the exclusion of sex transformation, which is only performed on transgender individuals.

Q. Why is it only performed on transgender individuals?

MS. HUPPERT: Objection to form.

A. Cisgender individuals do not typically seek a procedure, a sex transformation - or I'll call it gender affirming - procedure.

Q. The cisgender people do not typically seek. Is it possible for a cisgender person to seek such a surgery?

MS. HUPPERT: Objection to form.

A. I have not encountered that in my clinical practice.

Q. And if a cisgender person did seek that surgery, is there anything that would suggest to you that they would have a different outcome applying to West Virginia Medicaid for coverage?

MS. HUPPERT: Objection to form.

A. Well, again, cisgender individuals may undergo mastectomy, as we've said, oophorectomy, and so forth. But those aren't considered to be sex transformation procedures in cisgender individuals. Only for transgender individuals would a sex transformation procedure be performed.

Q. So are you aware of any language anywhere in the Medicaid policies which you reviewed that says that coverage is denied to someone on the basis of them being transgendered?

A. Again, sex transformation is only -- I apologize, it's just not a comfortable term for me. But a sex transformation is not performed -- or is only performed, excuse me, on a transgender person.

Q. So can you point me to language in the West Virginia Medicaid policy that says transgender people are not entitled to coverage?

MS. HUPPERT: Objection to form.

A. Sex -- again, sex transformation is only performed in transgender individuals.

Q. Okay. So where in the Medicaid policy does it say that transgender individuals are not entitled to Medicaid coverage?

MS. HUPPERT: Objection to form.

A. Sex transformation is only performed in transgender individuals.

Q. So if I pull up the Medicaid policies, are you going to be able to show me where it says that

transgender individuals are not entitled to Medicaid coverage?

MS. HUPPERT: Objection to form.

A. If it's one of the policies I reviewed, I can show you where sex transformation - again, I believe that was the language - is excluded. And that applies only to transgender individuals.

Q. Are there any other portions of the policy that you believe provide exclusions or noncoverage for transgender individuals?

A. I'm sorry, can you repeat that?

Q. Are there any other portions of the Medicaid policies that you believe exclude or do not cover services for transgender individuals?

MS. HUPPERT: Objection.

A. I focus on the exclusion for sex transformation services.

Q. So when you're saying that there is a categorical exclusion, you're talking about the category is gender affirming surgeries or sex transformation surgeries.

MS. HUPPERT: Object to form.

A. I'm referring -- and again, I'm using the term "gender affirming" to mean sex transformation.

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I'm referring to the exclusion of gender affirming surgery.

Q. All right. And beyond gender affirming surgery, are you aware of any other exclusions?

MS. HUPPERT: Object to form.

A. I did not review the policy specific to other clinical conditions.

Q. Okay. So to hopefully put a pin in this, the only exclusion that you are concerned with is that you believe that the West Virginia Medicaid policy excludes gender affirming surgeries.

MS. HUPPERT: Object to form.

A. No. The only exclusion that I was -- that I reviewed and am speaking to is the exclusion of sex transformation surgery. It's possible that there would be other concerns, but I reviewed this specific to the issue of sex transformation surgeries.

Q. Are you going to testify about any other exclusions that you believe exist for transgender individuals in the West Virginia Medicaid policy?

MS. HUPPERT: Object to form.

A. My area is -- focuses on the gender affirming -- the exclusion pertaining to gender

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affirming surgical services.

Q. Okay. So again, there's nothing outside of what you're talking about, the exclusion that you believe applies to gender affirming surgeries, that what you're saying -- that sex transformation surgery language is the universe of language that you were asked to look at.

MS. HUPPERT: Object to form.

A. I was asked to look at the exclusion of surgical services for transgender individuals, and the exclusion of sex transformation surgery applies only to transgender individuals.

I didn't look - as we discussed earlier - for coverage related to oncologic considerations.

Q. And Doctor, all I'm trying to do is find out if you're going to testify to any other portion of the West Virginia Medicaid plan. Is it -- are you only going to testify as to coverage related to gender affirming surgeries?

MS. HUPPERT: Object to form.

A. So I'm speaking to the exclusion for gender affirming surgeries. But to the extent that those are procedures that may be performed for other

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clinical conditions, I may speak to that issue, as we did mastectomy for oncologic conditions, for example.

Q. Okay. And you used the term "categorical exclusion," and I'm trying to understand what the category is that is being excluded.

MS. HUPPERT: Object to form.

A. The transgender individuals being excluded from surgical intervention, sex transformation services.

Q. And again, I want to be specific here. You are not implying that a transgender person can never get a mastectomy; you're saying that a transgender person is excluded from getting a mastectomy for gender dysphoria.

MS. HUPPERT: Object to form.

A. The language as I read didn't specify the condition on which it would be performed. Again, trans -- sex transformation surgery would only be performed on an individual who's transgender.

Q. Okay. Is it your testimony that transgender individuals, for any purpose, are excluded from getting a mastectomy?

MS. HUPPERT: Object to form.

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A. I am reviewing it within the context of being performed as a sex transformation surgery.

Q. Okay. You also just testified that you've looked at other portions as they relate to similar types of procedures like mastectomies that we just talked about, and you specifically pointed out. Are you saying that transgender individuals are excluded from getting a mastectomy for any diagnosis?

A. No, I said --

MS. HUPPERT: Objection.

A. -- I said I did not review it for oncologic -- for coverage, for example, for oncologic services, regardless of one's gender identity.

Q. Okay.

A. The fact that sex transformation is excluded would apply only to a transgender person. Whether a cisgender woman can have a -- would have access to oncologic breast services, I did not review the policy within that framework.

Q. Did you review the policy in the framework of a transgender person receiving oncologic care?

A. I refer to -- I refer --

MS. HUPPERT: Sorry to interrupt.

Objection to form.
You can answer.
THE DEPONENT: Thank you.
A. I referred it -- I reviewed it within the context of sex transformation surgery, again performed on a transgender individual.
Q. Are you aware of any exclusions beyond the exclusion for sex transformation surgery?
A. There were other exclusions in the list with sex transformation surgery. I don't recall them by memory.
Q. Okay. Are you aware of any individual attempting to get a single case agreement from West Virginia Medicaid for a gender affirming surgery?
MS. HUPPERT: Object to form.
A. Not to my knowledge.
Q. Have you reviewed Christopher Fain's medical records?
A. No.
Q. Have you spoken to Christopher Fain?
A. No.
Q. Have you examined Christopher Fain?
A. No.
Q. Same questions for Shauntae Anderson. Have

you reviewed Shauntae Anderson's medical records?
A. No.
Q. Have you spoken to Shauntae Anderson?
A. No.
Q. Have you examined Shauntae Anderson?
A. No.
Q. Have you read Doctor Karasic's report that includes interviews with Mr. Fain and Ms. Anderson?
A. No, only to the extent of what I've always included in Doctor Levine's report pertaining to what he referred to in Doctor Karasic's report.
Q. Okay. So you have not reviewed either the original report or the rebuttal report from Dan Karasic.
A. I have not reviewed anything from Doctor Karasic.
Q. Do you consider yourself to be an expert in the evaluation of evidence?
MS. HUPPERT: Objection to form.
A. What type of evidence?
Q. Well, there are principles of evidence-based decision making in medicine, correct?
A. Yes.
Q. Okay. And what are those principles?

A. Are you referring to levels of evidence?
Q. Sure. And we can talk about levels of evidence. But I'm referring to the principles that a physician use the best available evidence, that the physician use a framework to judge the trustworthiness of that evidence, and that if the evidence isn't sufficient, that the physician consider the patient's needs and preferences in determining treatment.
Is that something that you're familiar with?
MS. HUPPERT: Objection to form.
A. I'm not quite clear on what context you're -- to which you're referring.
Q. Sure. I'm referring to the evaluation of evidence as defined by the American Medical Association. Is that something that you're familiar with?
A. I'm familiar with levels of evidence pertaining to study design, yes.
Q. Okay. So when you're talking about levels of evidence, you're talking about Level I being high-quality multi centered or single-centered randomized controlled trials with adequate power or

systematic reviews of those studies.
A. That would be a typical definition. There may be others. But that would be one.
Q. Okay. What are the other definitions?
A. Well, I -- if you're referring to a specific study, you know, I can review that study and look at your wording. There may be other definitions where the wording is slightly -- slightly different.
Q. Sure. Well, and this, I don't believe, is specific to gender affirming care, but I pulled those levels of evidence specifically from a document that you co-authored, and I'll go ahead and show that now.
MS. HUPPERT: I just wanted to sort of raise, you know, the logistics of how you're intending to handle documents. Just curious, you know, is the witness going to have control over what he's seeing, that sort of thing?
MR. DAVID: I was simply going to share my screen and I was going to show him the specific table, scale for grading recommendations that's included in an article that he published.
If he would like me to scroll up,

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scroll down, I'm happy to do it. I don't know if that's a capability that he will have.

MS. HUPPERT: Okay.

Q. Doctor, can you see what's on the screen?

A. I can.

Q. And I'll scroll up to the top so that you can see that. This is a -- an article titled "Evidence-based Patient Safety Advisory" - and I'm not even going to pretend that I understand how to pronounce that word - "Blood Dyscrasia?"

A. Dyscrasia.

Q. Okay. And you are one of the co-authors of this article, correct?

A. I am.

Q. Okay. And there is a table, Table 1. Can you see that on the screen?

A. Table -- yeah. Not crystal -- could be my eyes. But not crystal clear, but I can see it.

Q. I can see if I can zoom in a little bit, maybe I can even go a little bit further. And that should -- can you see it a little bit better now?

A. I can, yeah.

Q. Okay. And that Evidence Rating Scale has Levels of Evidence I through V, correct?

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A. It does.

Q. Okay. And Level I is "High-quality, multi centered or single-centered randomized controlled trial with adequate power, or systematic review of these studies." Is that correct?

A. That's what it says, but if you could enlarge, I'd like to see because it's possible we used -- I want to see what evidence scale we used, so there should be a reference to that. So if you can perhaps --

Q. Where would I go?

A. Perhaps -- I want to see in the text where that source was from, because that wasn't -- okay, wait. Okay, depending on study's own quality -- yes, okay, that was through the ASPS Evidence Rating Scale, which is why I asked.

And there may be other rating scales, but for the purpose of this purpose -- for this manuscript, that was used.

Q. Okay. And is the ASPS rating scale a generally-accepted rating scale?

A. Can you go up? I want to see what year --

Q. Sure. This was 2009, I believe.

A. Yes, so it's conceivable that that scale has been updated since 2009.

Q. Okay. Can we agree that randomized controlled trials are the gold standard?

A. Well, it depends on how they're performed. Simply because something is a randomized controlled trial doesn't mean that it was performed in a scientifically-correct manner.

Q. Sure. And assuming that the trials are conducted in an appropriate manner, would they be the gold standard?

MS. HUPPERT: Object to form.

A. So --

MS. HUPPERT: Apologies. Object to form.

You can answer.

A. Again, so it would depend on the study design. Simply a randomized controlled trial, an individual randomized controlled trial, doesn't mean it's, as you said, a gold -- a gold standard.

Randomized controlled trials, when studied appropriately, would carry a level -- a Level I, typically -- the Level I level of evidence.

Q. Okay. Would you agree --

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A. And you can -- well, you can see the caveats in the table: "With adequate power," for example, being one of those caveats.

Q. So would you agree that prospective randomized double-blind placebo-controlled studies are the gold standard?

A. I would say that would be a framework for what would be Level I evidence. Again, as to a particular study, it would depend on the study, adequacy of that particular study.

Q. Doctor, are you aware that I just quoted from your rebuttal report that says, "While prospective randomized double-blind placebo -controlled studies are the gold standard, they cannot be used to evaluate many clinical procedures"?

A. I agree with that statement, the fact that they cannot be used to evaluate many clinical procedures.

Q. Do you agree with the statement that they are the gold standard?

A. When performed, as I said, appropriately, yes.

Q. Okay. And in this instance, I believe that

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your written testimony, at least, is that for gender affirming care - specifically gender affirming surgeries - you cannot do these types of studies. Is that correct?

MS. HUPPERT: Object to form.

A. Which type of study?

Q. A random -- a prospective randomized double-blind placebo-controlled study.

A. So as with many areas of surgery and medicine, you cannot perform that type of study. For example, it may be unethical to deny people medically-necessary care. Also, surgery doesn't lend itself to either a placebo or a double-blind framework.

Obviously if you had surgery, you're going to know that you've had surgery.

So as with other clinical areas of medicine -- for example, a cleft lip. We don't randomize children to repair or not repair their cleft -- their cleft lip. Similar to other areas of medicine, randomized controlled trials or placebo or double-blind studies may not be ethical or feasible.

Q. So are you aware any Level I evidence in

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support of gender confirming or gender affirming surgeries?

MS. HUPPERT: Object to form.

A. As with many areas of plastic surgery, the levels that I have (Zoom audio glitch) in gender affirming surgery are very much consistent with that due to the considerations we just discussed.

Q. Okay. So can you list all of the studies that you are aware of that have produced Level I -- Level I evidence in support of gender confirming surgeries?

MS. HUPPERT: Object to form.

A. As we've said with -- both in my report and now, in areas of plastic surgery, we can't -- they don't lend themselves - either because of medical ethics or practical considerations, like a placebo - to that type of study framework.

So the levels of evidence within gender affirming surgery are consistent with other areas of plastic surgery.

Q. So how many articles in your bibliography contain Level I evidence for -- in support of gender affirming surgery?

MS. HUPPERT: Object to form.

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A. I'd have to review that bibliography.

Q. Well, I just asked you to list all of the ones that you're aware of, and you didn't list any. So are any in your bibliography?

MS. HUPPERT: Object to form.

A. I'd have to, again, refuse -- specific to -- I'm sorry, I'm getting an echo -- all the sudden, I'm getting an echo.

Okay. I'd have to specifically review the bibliography. But again, as other studies cited in my bibliography, the levels of evidence in gender affirming surgery are consistent with that of other areas of plastic surgery which are readily accepted as medically necessary.

Q. So can you name a single piece of medical literature that contains Level I evidence in support of gender affirming surgery?

MS. HUPPERT: Object to form.

A. As we said, the -- denying people medically necessary care would be unethical. So it would be medically inappropriate to deny people medically necessary care, and simply not be feasible to, for example, perform a placebo control within the area of surgery.

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So that's not something that's medically feasible to do.

Q. So you are unable to name any medical literature that includes Level I evidence in support of gender affirming surgery.

MS. HUPPERT: Object to form. Asked and answered.

A. Again, it is not possible to have a placebo designed with surgery. So it's not medically feasible to do that.

Q. Okay. All right. So Level II evidence is lesser quality, randomized controlled trial, prospective cohort study, or systematic review of these studies. Is that correct?

A. Well, you're using a 2009 scale.

So based on the 2009 scale -- I see what you're reading. Again, it's conceivable that that ASPS evidence scale has been updated.

Q. Are you aware of the scale being updated?

A. It's possible. I can't say for certain.

Q. Are you aware of any lesser quality, randomized controlled trials, prospective cohort studies or systematic review of those studies that analyze the efficacy of gender affirming surgery?

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MS. HUPPERT: Object to form.
A. I'm aware of systematic reviews. I'm aware of prospective studies. Again, I'm not aware of a randomized controlled study as it would not be ethical to deny people medically necessary care.
Q. Okay. What systematic reviews are you aware of?
A. I believe some of those are listed in my rebuttal report, or in the bibliography.
Q. What prospective cohort studies are you aware of in efficacy of gender affirming surgeries?
A. I'm aware of -- I don't recall whether they were cohort studies, so I can't specifically say they were cohort studies.
Q. Can you explain to me what a prospective study is?
A. It is - within the context of surgery - performing, for example, a procedure and then following that individual on a go-forward basis as opposed, for example, to looking backwards in a retrospective nature at a procedure that was performed at a time in the past and then evaluating the outcome.
Q. Have you participated in any prospective

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studies?
A. Yes.
Q. In what prospective studies have you participated?
A. I have participated in studies that explore patient expectations regarding gender affirming surgery. I have participated in prospective studies that look at expectations -- or I should say "am participating in," currently.
-- studies that explore expectations around sexual function following gender affirming surgery. And there was one other that I can't recall. I believe it was contained within the expectations around gender affirming surgery.
Q. All right. Have you participated in any prospective studies that analyze mental health outcomes of individuals undergoing gender affirming surgery?
A. I'm sorry, did you say -- can you repeat that?
Q. Sure. Have you participated in any prospective studies that analyze and focus on the mental health outcomes of patients undergoing gender affirming surgeries?

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A. I have participated in studies that look at outcomes. It's conceivable that there were mental health parameters, but I believe the focus was on complications relating to gender affirming surgery.
Q. Are any of the prospective studies that you have participated in, have they been published?
A. They have been presented. Whether they have been published in a -- in a proceedings manner, I am not entirely sure. It's conceivable. But they've been presented.
Q. Okay. So they may have been presented at a conference -- or they have been presented at conferences, but you're not aware of a place that I could go on the Internet and find a print version or an online version of the study.
MS. HUPPERT: Object to form.
A. It's conceivable they may have been published as part of the abstracts in the proceeding, but I'd have to look at my CV. I don't recall that 100 percent.
Q. Okay. And for these prospective studies, who actually conducted the studies?
A. Myself as well as a team of researchers.
Q. And how -- what was your method -- what is

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your methodology -- if there are some that are still going on -- but what was or what is your methodology for these prospective studies?
MS. HUPPERT: Object to form.
A. Those were survey studies.
Q. Okay. And did you develop the survey questions?
A. I did in conjunction with other members of the team.
Q. And how many of these survey studies have you completed?
A. So the two prospective studies -- I'm thinking of one that was a pilot study regarding expectations around gender affirming surgery.
The other is currently ongoing looking at expectations regarding sexual function before and after gender affirming surgery.
Q. Okay. And how often are the patients surveyed?
MS. HUPPERT: Object to form.
A. So for the current, pre-operatively, and then at, I believe, six-month follow-up and one-year follow-up.
Q. Do you have any intention to extend that

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follow-up period?
A. We are always, you know, considering new -- new clinical research questions and possibilities, so it's certainly possible.
Q. Why did you choose a one-year follow-up period?
A. To obtain the data. People may be less apt to complete survey questions as time goes on.
Q. And in your pilot study on patient expectations, how many of the patients within the study population actually participated in the survey?
A. An estimate is somewhere around 30. Again, I'd have to look specifically at the study to give -- to give the exact number. It could be a bit more or it could be a bit less.
Q. And we'll say it's an approximation. So does that mean that approximately -- well, let me ask you this first: Was the pilot study set up the same way? There was a pre-operative, a six-month and a one-year survey?
A. It was. We stopped -- or we had limited information -- or I should say we didn't have full post-op survey because the IRB changed, and that

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was in the switch to Rush University.
So we -- rather than write a new IRB, we stopped with the pre-operative survey and then we collect data now through what's called the REDcap system which is a method of maintaining or obtaining data.
Q. Okay. You just used what I assume is an acronym, an IRB. Can you tell me what that is?
A. Sure. Institutional Review Board.
Q. Okay. And so the Institutional Review Board changed as you changed locations from Weiss to Rush?
A. No. The hospital -- my employer changed in 2019 when my employer sold the hospital, and with that, the IRB changed.
So rather than recomplete -- or rework the IRB, we decided to pursue a different methodology.
Q. Okay. And so the pilot started -- and I'm just trying to understand the timing. Was the pilot study interrupted as a result of the change in the IRB?
A. We completed the pre-operative surveys. We were not able to complete the post-operative

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surveys.
Q. Okay. And so there -- let me ask: Were you offering or requesting that all of your patients participate in this program?
A. I believe we had -- I believe it focused on mastectomy and genital surgery. I don't recall that we -- I think we excluded face. I believe individuals had to be the age of majority. There may have been some other exclusion criteria that I'm also thinking -- that I just can't remember.
So the answer is: It was not open to all individuals. There were some inclusion and exclusion criteria.
Q. Okay. And for the pre-operative surveys, what was the time frame? Was it over the course of a year? And what I mean is, the patients who were included in the study, were they patients who had the -- a procedure over the course of a single year?
A. No, this -- these were pre-operative, so their procedure could have been 6 months, 12 months, 18 months later. It was specific to that point prior to surgery. Whether surgery, you know, occurred within that calendar year depended on the

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person.
Q. Sure. So now with that understanding, to refine my question a little bit, did you say, "Okay, we're going to survey people pre-operatively from July 1st of 2017 to June 30th of 2018," for example?
A. I don't remember. I think we may have -- again, this is an approximation. We may have set the target as a specific number, not necessarily by date at which they were seen.
Q. So if I'm understanding correctly -- and I don't know what the number was. But let's say that you were hoping for 100 participants. You, over the course of time, requested that people participate in the survey if they didn't have an exclusion criteria until you reached that number of 100.
A. It wasn't 100. It was designed as a pilot study, so then further we refined survey questions. So it was less than 100 individuals, again, with the purpose to review and then further refine survey questions.
Q. Okay. Do you believe that your pilot study is a reliable study with Level II evidence?

MS. HUPPERT: Object to form.
A. It's not a -- I would not -- again, based on this 2009 classification -- once again, I don't know if this is the most recent ASPS rating scale. So this would be from 13 -- 13 years ago. It's possible, but I can't speak to that same scale being used.
Q. Would you classify your pilot study as a prospective cohort study?
A. I would classify it as a prospective case series.
Q. Okay. And under the table, again the 2009 ASPS rating scale, would that be Level IV?
A. Again, I can't accept this scale from 2009 as being representative of 2022.
Q. Okay. So in 2022, which is a better or a higher level of evidence, a prospective cohort study or a case series?
MS. HUPPERT: Object to form.
A. Again, as for a particular study, it would depend upon the study design of that -- of that particular study. In other words, a prospective cohort study, poorly done, would not necessarily be a higher quality but may -- could be considered a

higher level of evidence.
Q. What were the results of your pilot study?
A. It was a survey designed to look at expectations regarding gender affirming surgery, and we had a variety of questions as well as the opportunity to free text as to reasons why or motivations for individuals to choose a surgical intervention such as aligning their body or alleviating or relieving their gender dysphoria.
Q. Were there individuals who were seeking that surgery in your study to align their body but not to alleviate gender dysphoria?
MS. HUPPERT: Object to form.
A. I'd have to look. I'd have to go back and look at the individual -- individual data.
Q. Okay. Is that something that you see in your practice, that there are people who would like to align their body with their gender identity but they don't have gender dysphoria?
MS. HUPPERT: Object.
A. So my typical indication for surgery is gender dysphoria.
Q. Okay. So are there patients that you have that would like to align their body with their

gender identity but who do not suffer from gender dysphoria?
MS. HUPPERT: Object.
A. It's possible that I've seen patients as you describe.
Q. Okay. Have you yourself conducted any systematic reviews on the efficacy of gender affirming surgeries?
A. I have been involved as an author, participated in studies that have performed reviews. Some may be scoping reviews, and some may have been systematic. I'd have to look specifically at my CV.
Q. What is a scoping review?
A. A literature search would have been done but not necessarily in a systematic fashion where one would include or exclude articles based on certain criteria.
This would incorporate -- or could incorporate the universe of articles.
Q. Has your pilot study been involved or included in any systematic reviews to your knowledge?
A. Not to my knowledge.

Q. Are you familiar with the Grade framework for evaluating the trustworthiness of evidence?
A. I have heard of it, yes.
Q. Okay. And I'll go ahead -- I'm done asking about that Evidence Rating Scale, so I'll go ahead and go back to you getting to see my face.
Is the Grade Rating Scale something that you use in your practice?
A. You mean clinically?
Q. I mean in terms of your -- the academic or research side of your practice.
A. Well, the Grade system, I believe, is used to look at clinical practice guidelines.
Q. Okay. And you're correct that that is one of the uses of the Grade system, and it's for treatment recommendations, and they rate the strength of those treatment recommendations. Is that the part that you're familiar with?
MS. HUPPERT: Object to form.
A. I'd have to look at the specific, again, uses of Grade, but I believe they are used to evaluate clinical practice guidelines.
Q. And do you know what the grading scale is within Grade?

A. I don't recall the specific scale.
Q. Okay. Are you familiar with the Grade system providing a strong treatment recommendation?
MS. HUPPERT: Object to form.
A. I'd have to see the specific scale. I can't speak contemporaneously to the specifics of how they do it, how they -- how Grade grades.
Q. Okay. Now, Doctor, in your original report - and I believe that it's in Paragraph 18 - you state "The term transgender is used to describe a diverse group of individuals whose gender identity or internal sense of gender differs from the sex they were assigned at birth."
Is that an accurate statement?
A. It is.
Q. Okay. And there are a couple of different terms in there that I'd like you to define. And the first one is sex.
A. Sure. So sex is comprised of several factors, which may include one's anatomy, typically external and/or internal genitalia, chromosomes and their gender identity, their internal sense of who they know themselves to be.
Q. So an individual -- let me ask: Do you

differentiate between the terms "gender" and "sex?"
A. So gender -- well, gender itself may include a variety of things, such as expression, behaviors and so forth. Sex, as we've said -- so gender may be incorporated within the context of sex in the sense of one's identity being a part of -- of their sex.
Q. Now, one of the things that you mentioned that comprises sex is chromosomes, and that's something that cannot be changed. Is that correct?
MS. HUPPERT: Object to form.
A. Well, radiation -- there are things that can alter DNA. That's typically not what we do in surgery.
Q. Okay. I'll limit it to surgery. Are you able to surgically alter DNA?
A. I don't know if in the universe of what's going on in the world, but not in my practice.
Q. Okay.
A. I guess unless we take it to a -- you know, I suppose could radiation for cancer alter DNA? You know, it's possible. I assume that's possible and does, but --
Q. Okay. And the other part of this, you also

say that the gender identity is an internal sense of gender. And my first question is: Do you believe that gender is fluid?
MS. HUPPERT: Object to form.
A. I believe it depends on the individual person.
Q. And can an individual person's gender identity change over time?
A. Depending on the individual, it's -- it is possible.
Q. Have you witnessed that in practice, someone's gender identity changing over time?
MS. HUPPERT: Object to form.
A. So I have seen and cared for individuals who would describe themselves as gender fluid.
Q. Okay. And have any of those individuals described to you that they have had a shift in their gender identity throughout their lives?
MS. HUPPERT: Object to form.
A. I have had one patient who I performed a breast augmentation on who probably 10ish - give or take - years later requested removal of the breast implants.
Q. Okay. I'm going to ask you if you agree

with a statement: While some people develop a gender identity early in childhood, others may identify with one gender at one time and then another gender later on. Do you agree with that?
MS. HUPPERT: Object to form.
A. I would have to see the context in the document to which you refer.
Q. Okay. I'm asking a question. Do you agree that while some people develop a gender identity early in childhood, others may identify with one gender at one time and then another gender later on?
MS. HUPPERT: Object to form.
A. So I don't treat children, so that is not a statement that, you know, would be within my clinical area.
Q. Okay. Have you seen adults who have had a shift or a change in their gender identity over their life span?
MS. HUPPERT: Object to form.
A. So as I said, I have one patient who I performed a breast augmentation on who was assigned male at birth, was a transgender woman upon whom I performed a breast augmentation, and then, as I

said, approximately 10 years - it may be a bit -- somewhere between 8 to 10 years - requested removal of the implant and was identifying with their male sex assigned at birth.

Q. When you say "sex assigned at birth," what do you mean by that?

A. The sex designated or recorded typically based on one's external genitalia.

Q. And typically is the external genitalia determined by that individual's chromosomes?

MS. HUPPERT: Object to form.

A. For most individuals, chromosomes will determine -- will -- well, various factors. Chromosomes, hormones, receptivity to those hormones, all will impact the development of the external genitalia.

Q. And just because someone is born with the genitalia of a male does not mean that that person's gender identity will align with a male. Is that correct?

MS. HUPPERT: Object to form.

A. So you're referring to "male" meaning a penis, the fact that someone is born with a penis, assigned male at birth, does not necessarily

indicate -- or does not comply as we wouldn't know at birth what the identity of that individual is.

Q. Okay. And would you agree with me there is a social construct?

A. I'm sorry, you cut out.

Q. Yeah. Would you agree with me that gender is a social construct?

MS. HUPPERT: Object to form.

A. I believe that gender is innate for an individual.

Q. And what do you mean, that gender is innate for an individual?

A. People are born as who they -- who they are.

Q. And I'm not disagreeing with that. I'm talking specifically -- you're saying that there are gender identities that may be different from the sexual organs that someone is born with, and how do we assign an identity to someone based upon their external genitalia?

MS. HUPPERT: Object to form.

A. Historically, it's been based upon the external -- the appearance of the external genitalia.

Q. Okay. And we do that through the stereotype of people who have a certain external genitalia, correct?

MS. HUPPERT: Object to form.

A. We do that typically based upon the appearance of the external genitalia. I wouldn't say necessarily "stereotype."

Q. Okay. Well, what do you -- what is your definition of "stereotype?"

A. Stereotype are characteristics that are applied to a group of individuals based off of some characteristics that individuals may have in a certain category. They may be accurate; they may be inaccurate.

Q. And for example, there is a stereotype that men like football. Correct? That's a stereotype that you've heard?

MS. HUPPERT: Object to form.

A. Well, my wife likes football too, so I can't -- can't say that I would agree with that stereotype.

Q. And I'm not asking if you agree with it. I'm just asking if you've heard of that stereotype.

MS. HUPPERT: Object to form.

A. Men like football. I can't say that I specifically have heard it or not heard it. I don't deny that men like football, but I don't deny that men, women or transgender individuals may like football. I don't think liking football depends on one's anatomy or gender identity.

Q. Sure. And so tell me what -- give me an example of a stereotype that you have encountered as a male.

MS. HUPPERT: Object to form.

A. Stereotype. Well, I can certainly say that I've been misgendered for most of my life based on my first -- first name. That's happened ever since I was a child and continues to happen.

I can't say that I've been stereotyped in a particular way for being male.

Q. Okay. Well, let's go with your name. And you have been misgendered because typically the name Loren is associated with someone who is born with a vagina, correct?

MS. HUPPERT: Object to form.

A. No, actually, I don't agree with it. Spellings are different. Historically, Loren was also characteristically a name for cisgender -- I

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can't say "cisgender" -- I don't know everyone's identity. But also associated with male-assigned -- assigned at birth. So I won't -- can't agree with that.

Q. Then why do you believe that you've been misgendered?

A. Individuals have taken the name Loren to assume that I was female.

Q. All right. And do you not believe that that's because society expects that the name Loren is associated with a female?

MS. HUPPERT: Object to form.

A. I -- I mean, I can't answer what everyone's particular reason was, especially given the spelling.

I think perhaps if it was spelled differently, I might agree with that.

Q. Do you agree with me that gender roles have changed over time?

MS. HUPPERT: Object to form.

A. You'll have to be more specific. I'm not sure.

Q. Sure. Do you believe that the gender roles of people who are -- who identify as women today

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are the same as they were a hundred years ago?

MS. HUPPERT: Object to form.

A. Again, if you -- I need you to be more specific as to -- and these are individual discussions based on the person. I can't apply a sweeping generality to something.

Q. Okay. How does someone develop a gender identity if there is no societal pressures about gender?

MS. HUPPERT: Object to form.

A. So my area of expertise is not in the development of gender identities or the development of those identities.

Q. And so you can offer no testimony about why someone has a specific gender identity.

MS. HUPPERT: Object to form.

A. I would defer to my colleagues who diagnose and treat children and adolescents.

Q. And it's your testimony that you do not have the -- a common understanding of how stereotypes are developed.

MS. HUPPERT: Object to form.

A. I'm sorry, you cut out.

Q. Is it your testimony that you do not have a

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common understanding of how stereotypes are developed?

MS. HUPPERT: Object to form.

A. It's my -- I believe I provided a definition of a stereotype.

Q. Okay. Give me an example of a stereotype of a male.

MS. HUPPERT: Object to form.

A. Of a cisgender male?

Q. A cisgender male.

A. I can't think of a stereotype that I would apply to cisgender men.

Q. Can you think of a stereotype that you would apply to cisgender women?

A. No.

Q. Have you ever heard of any stereotypes of cisgender women?

MS. HUPPERT: Object to form.

A. I can't say I would classify things of -- as a stereotype. I judge people individually, not collectively.

Q. And do you believe that society does that the same way as you?

MS. HUPPERT: Object to form.

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A. Again, I would need to have more context to answer that question.

Q. Do you believe that society does not apply gender stereotypes?

MS. HUPPERT: Object to form.

A. Well, if the question is individuals who are members of marginalized groups are subject to stigmatization and prejudice, I would agree with that.

Q. Okay. So you believe that there is a stigma around people who are in marginalized groups.

MS. HUPPERT: Object to form.

A. Yes, there can be.

Q. Okay. And what do you believe that that stigma is based upon?

MS. HUPPERT: Object to form.

A. It would depend upon, again, what -- the -- what we're talking about, you know, the specific situation.

Q. So let's talk about race then. Have you heard of any stigmas or stereotypes regarding race in America?

MS. HUPPERT: Object to form.

A. Stigma or stereotype associated with race.
Well, I believe that humans are of one race.
Q. Okay. Have you ever listened to a certain former president refer to groups of people as rapists and criminals?
MS. HUPPERT: Object to form.
A. Can you be more specific to whom you're referring and to a specific instance?
Q. Have you ever -- do you recall Donald Trump stating that people coming across our southern border - referring to Hispanic individuals - were rapists and criminals?
MS. HUPPERT: Object to form. Object to scope.
A. I remember certainly Donald Trump. I can't remember the -- or don't have the specific quotations he used to refer to individuals, whether they're crossing the southern border or not.
Q. And would you agree with me if Donald Trump said that, that he is applying a stigma or a stereotype to a certain group of people?
MS. HUPPERT: Same objection.
A. I'm sorry, if someone -- well, if someone

were applying a generalization to an individual person without knowledge of who that person is, I would say they're wrong, without knowing the qualities or characteristics of that individual.
Q. And I don't disagree with you. I think it's also wrong. But I believe -- and I believe that you can testify that that is something that happens in America every single day, that a generalization is applied to an individual based on physical characteristics.
Is that true?
MS. HUPPERT: Same objection.
A. Again, if you can give me a specific instance, I can try my best to speak to it. But I can't speak for how all of America applies.
Q. So is it your testimony that your patients who are transgender do not experience any sort of stigmatization or stereotyping?
MS. HUPPERT: Object to form.
A. So I treat my patients on an individual basis. I provide care on an individual basis, after obtaining the requisite information, and make determinations and recommendations based upon that.
Q. Okay. And what are you treating? What

medical condition are you treating?
MS. HUPPERT: Object to form.
A. In appropriately-selected individuals, my typical indication for surgery, for gender affirming surgery, is the condition of gender dysphoria.
Q. Does the condition of gender dysphoria require there to be distress caused by someone having a gender identity that is not aligned with their physical sex characteristics?
MS. HUPPERT: Object to form.
A. So gender dysphoria is -- is a manifestation of gender incongruence, one's identity not being consistent or congruent with their physical anatomy, typically external -- typically with their anatomy.
Q. And if everyone is an individual, then what is the cause of the distress? What is it that is making someone believe that their gender identity does not match with their external characteristics of their genitals?
MS. HUPPERT: Object to form.
A. I don't make the diagnosis of gender dysphoria.

Q. So do you not understand the diagnosis well enough?
A. I work with colleagues who provide assessments regarding the diagnosis, just as I work with -- used to working more frequently with oncologists who made diagnoses of cancer.
There are experts in those particular areas.
Q. Okay. So do you understand what you're actually treating when you are performing these gender affirming surgeries?
A. I'm treating the medical --
MS. HUPPERT: Pardon me, object to form.
You can go ahead.
A. I'm treating the medical condition of gender dysphoria.
Q. And what symptom are you attempting to alleviate?
A. We are making one's body congruent with their mind, with their identity.
Q. Is incongruence alone sufficient for someone to undergo gender affirming surgery?
MS. HUPPERT: Object to form.

A. So as I said, my indication is typically gender dysphoria. Is it conceivable that someone with gender incongruence may not have dysphoria? Yes.

Is it conceivable that someone with gender incongruence would request a surgical intervention? Yes.

As I said, I would have to look back, but my typical indication is gender dysphoria.

Q. How is someone's -- how does someone experience gender incongruence if there aren't societal pressures about what gender actually is?

MS. HUPPERT: Object to form.

A. So again, I don't make those diagnoses, but there are also the -- while society may play a role, the individual's internal sense of identity may be disparate or incongruous with their physical anatomy.

Q. And again, what makes someone's identity tied to or supposed to be tied to or supposed to not be tied to -- who is saying that it should be tied to their anatomy?

MS. HUPPERT: Object to form.

A. I'm sorry, you're -- again, you're cutting

a little in and out.

Q. I'm sorry. So the -- you said that there is an incongruence between their sense of gender and their anatomy. Is that correct?

A. There's an incongruence between their gender identity, their internal sense of who they are, and their physical morphology, their anatomy.

Q. Okay. Why are those two things interrelated at all?

MS. HUPPERT: Object to form.

A. As I said earlier, I don't make that diagnosis. My role is making the body congruent with their identity.

Q. And if you make someone's body congruent with their identity, does that cure something or alleviate something?

MS. HUPPERT: Object to form.

A. In the case of gender affirming surgery for gender dysphoria - so again, in appropriately-sought individuals - surgery is typically part of a multi-faceted treatment plan and can alleviate or cure gender dysphoria.

Q. So is gender dysphoria a psychological condition or a medical condition?

MS. HUPPERT: Object to form.

A. Gender dysphoria is a medical condition. Fortunately, treatable.

Q. And is there any diagnostic manual other than the DSM-V that identifies gender dysphoria as a medical condition?

MS. HUPPERT: Object to form.

A. Again, I don't make the diagnosis of gender dysphoria.

Q. What other DSM-V diagnoses do you perform surgery to treat?

A. I don't make DSM-V diagnoses. We perform surgery for medical conditions --

Q. I understand --

A. -- of which gender dysphoria is one.

Q. I understand. Are you saying that it is not a DSM-V -- gender dysphoria is not a DSM-V diagnosis?

A. Gender dysphoria is in DSM-V. That does not mean it's not a medical condition and we perform -- I perform surgery for the medical condition of gender dysphoria.

Q. Are there any other DSM-V diagnoses that you perform surgery to treat?

A. Again, I don't make DSM-V diagnoses. The fact that there may be mental health manifestations of a medical condition does not mean that that -- that the condition is not a medical condition.

Q. Physicians refer patients to you for treatment with surgery of DSM-V diagnoses other than gender dysphoria.

MS. HUPPERT: Object to form.

A. Again, my medical indication -- a surgical indication is the medical diagnosis of gender dysphoria. The fact that a medical condition may have mental health manifestation is not unique to gender incongruence.

Q. Please list all DSM-V diagnoses for which you provide surgical treatment.

MS. HUPPERT: Object to form.

A. I have a number of individuals - regardless of their underlying medical condition - who may have DSM-V diagnoses that doesn't prohibit them from undergoing surgical interventions for their medical indications.

Q. Do you treat generalized anxiety disorder with surgical intervention?

A. No.

Q. Do you treat clinical depression with surgical intervention?

A. No. That's not to say that mental health conditions may not improve. But that's not a primary indication for a particular procedure.

Q. Do you treat obsessive compulsive disorder with surgical intervention?

A. I treat medical conditions with surgical interventions. The fact that people may have mental health conditions and the fact that some of those mental health conditions may improve after surgery is a potential benefit of the surgical procedure.

Q. Have you ever performed a surgery with the sole indication being obsessive compulsive disorder?

A. No.

Q. Do you perform surgery for individuals with body dismorphea?

MS. HUPPERT: Object to form.

A. With body dysmorphyic disorder?

Q. Correct.

A. Typically not.

Q. Okay. Would you agree that an individual

with body dysmorphyic disorder may suffer with distress caused by their physical appearance?

MS. HUPPERT: Object to form.

A. Again, I don't diagnose or treat body dysmorphyic disorder.

Q. Are you aware of any guidelines, medical literature anywhere that says that surgery is an appropriate treatment for body dysmorphyic disorder?

MS. HUPPERT: Object to form.

A. I have not performed surgery for body dysmorphyic disorder. It is generally considered not effective for the condition of body dysmorphyic disorder.

Q. Have you reviewed literature on the efficacy of surgery for body dysmorphyic disorder?

A. Probably over the course of my career.

Q. Do you have colleagues that perform surgery with the indication being body dysmorphyic disorder?

A. I can't speak to all my colleagues' indications for surgery.

Q. Have you ever discussed that issue of treating patients with the indication being body

dysmorphyic disorder with surgical intervention with your colleagues? Have you ever discussed that?

A. Not as a -- I have probably attended educational conferences and so forth and it would be typically understood that surgery would not be a treatment for body dysmorphyic disorder.

Q. And do you know why surgery is not a treatment for body dysmorphyic disorder?

MS. HUPPERT: Object to form.

A. It's my understanding it tends to be ineffective or not effective for that.

Q. And when you say "ineffective," you mean that it does not alleviate the distress that that individual is experiencing? What is the measure of effectiveness?

MS. HUPPERT: Object to form.

A. Again, I don't diagnose or treat that, so that's not my clinic -- area of clinical focus.

Q. Okay. So when you say that it -- your understanding that it's not ineffective -- or it's not effective as a treatment -- surgery is not effective as a treatment for body dysmorphyic disorder, can you elaborate at all on what you mean

by "not effective"?

MS. HUPPERT: Object to form.

A. That it does not treat body dysmorphyic disorder.

Q. And are you aware of what the measures of whether it's effective are?

MS. HUPPERT: Object to form.

A. I don't make that diagnosis, so -- nor do I treat that.

MS. HUPPERT: Caleb, we're approaching noon here central time. I'm just curious what you feel about a break.

MR. DAVID: I'm good with a break.

MS. HUPPERT: How do you feel about that, Doctor Schechter?

THE DEPONENT: I'm good for a break, take care of a few things.

(A recess was taken after which the proceedings continued as follows:)

BY MR. DAVID:

Q. Doctor, we're back on the record, and I want to start by asking you if you are familiar with the 2017 Endocrine Society guidelines as they relate to the treatment of transgender individuals.

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A. I am familiar, yes.
Q. Okay. And have you reviewed those guidelines in their entirety?
A. Probably not in the sense that I don't dose hormones and things like that.
Q. Are you familiar with the statements made by the Endocrine Society as it relates to childhood desistance from gender dysphoria?
MS. HUPPERT: Object to form.
A. I don't recall those statements offhand.
Q. Could you tell me what desistance from gender dysphoria means?
MS. HUPPERT: Object to form.
A. Well, again, I don't treat children. My understanding is that the term "desistance" is for individuals - children, for example - who identify as transgender, whether that is sustained through adolescence or -- if not sustained through adolescence or adulthood, may be classified as desistance.
Q. And are you aware that the Endocrine Society states that 85 percent of prepubertal children with a childhood diagnosis of gender dysphoria do not remain gender incongruent in

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adolescence?
MS. HUPPERT: Object to form. Object to scope.
A. Again, I probably read that. But as I don't specifically treat children, that wouldn't be an area of focus for me.
Q. All right. Now, what ages of patients do you treat?
A. The oldest is 75; the youngest, on two -- I believe on two occasions, maybe three occasions, was 14.
Q. And what procedures have you performed on 14-year-olds?
A. A bilateral mastectomy.
Q. Is that the only procedure that you've performed on a 14-year-old?
A. Yes. For gender affirming surgery. I might have --
Q. Right, of course. I -- to clarify, all of these questions are going to be about gender affirming surgery. And have you performed procedures other than bilateral mastectomy on patients who are under the age of 18?
MS. HUPPERT: Object to form.

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A. Yes.
MS. HUPPERT: Pardon me. Object to form.
You can answer.
A. Yes.
Q. And what other procedures have you performed on patients under the age of 18 other than bilateral mastectomy for the treatment of gender dysphoria?
MS. HUPPERT: Object to form.
A. I have performed a vaginoplasty on 17-year-old -- 17-year-olds. And I believe metoidoplasty.
Q. Can you explain what is involved in a vaginoplasty?
A. Yes. The typical procedure involves formation of a vulva and associated structures, meaning clitoris and labia, removal of the penis and testicles, most often construction of a vaginal canal.
Q. Is a vaginoplasty an irreversible surgery?
MS. HUPPERT: Object to form.
A. Well, in the sense that could the surgical maneuvers be undone, the answer is yes. However,

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that is a complex -- complex procedure -- would be a complex procedure to do.
Q. If the surgical maneuvers were undone, would that patient be able to produce sperm to create children?
A. No. The --
MS. HUPPERT: I'm sorry. Object to form.
You can answer.
A. No. The orchiectomy would be permanent and irreversible.
Although prior to undergoing, individuals are offered the option for sperm preservation.
Q. And so in the case of a vaginoplasty, you stated that the penis and the testicles would be removed from the body. Is that correct?
A. Well, the -- technically, the corporeal bodies and a portion of the glands is removed and the testicles with spermatic cord. The penis is disassembled, so there are remnants used to form the clitoris, the labial structures and the vaginal canal.
Q. So tissue from the penis is used to

construct the vaginal canal, labia and clitoris.
A. Correct.
Q. Okay. In that case, where the penis and testicles are removed for the purposes of gender dysphoria, is that healthy tissue that is being removed?
MS. HUPPERT: Object to form.
A. The tissue that is -- the tissue contributes -- presence of the tissue contributes to the diagnosis of the medical condition. So very much like in other procedures, mastectomy or oophorectomy or cisgender women who may be at an increased risk of cancer but don't have cancer, tissue would be removed here for the purpose of treating the dysphoria and preventing -- for treating the dysphoria.
Q. So the penis is removed -- the tissue that's removed from the penis, does it have to have a -- any type of disease to be removed?
MS. HUPPERT: Object to form.
A. Well, it's the anatomy or the presence of that -- of the organ, the penis, that may lead to the diagnosis of gender dysphoria in the context of the identity not being congruous with the mind.

Q. Okay. Does it have to have necrotic tissue to be removed?
MS. HUPPERT: Objection to form.
A. No, it does not have to have necrotic tissue to be removed.
Q. Does it have to have gangrenous tissue to be removed?
A. It does not have to have gangrenous tissue to be removed. Similar to what we do, as we said, in a oophorectomy for a cisgender woman with a risk or predisposition to ovarian cancer or a mastectomy in a cisgender woman with -- or a cisgender man with a predisposition to breast cancer.
Q. And in this case, does there have to be a predisposition to cancer for the tissue to be removed?
A. I'm sorry, Mr. David. I think it's -- it comes in and out.
Q. I'm hearing something as well. I'm not sure what's going on there.
MS. HUPPERT: There may be someone with their -- who's off of mute.
MR. DAVID: Walt, I think you might be off your mute.

THE DEPONENT: If you'll give me one second, I'm going to raise my blinds. There's this terrible bright light and it's driving me crazy.
MR. AUVIL: Sorry about that. I don't know how that happened. Must have -- I don't know. Not used to being quiet for that long, I guess.
BY MR. DAVID:
Q. All right. Doctor, we're back on the record. And in the instance of a vaginoplasty, does the tissue of the penis have to be predisposed to cancer for it to be removed?
MS. HUPPERT: Object to form.
A. It does not have to be predisposed to cancer in order -- in order to be removed. There are often involutional changes associated with the testes and the penis found on pathology.
Q. When you say -- I think the word you used was "involutional" -- is that correct?
A. That's correct.
Q. Can you explain what that means?
A. Atrophy.
Q. All right. So is atrophy generally an indication for surgical removal of tissue?
A. The indication is typical for vaginaplasty

is gender dysphoria, typically gender dysphoria. The pathologic findings in the tissue samples often indicate atrophy or involutional changes of the structures we discussed.
Q. Are you aware of any other surgery other than gender affirming surgery that is performed due to atrophy?
MS. HUPPERT: Object to form.
A. Wow. Procedures can be performed for atrophy, depending on the specific circumstances.
Q. Do you remove body parts that are atrophied?
A. So, for example, if a cisgendered woman had unilateral breast cancer, underwent mastectomy, as with age, she had involutional changes of the opposite breast, the contralateral breast, surgery could then be performed on the contralateral breast to provide symmetry.
Q. So --
A. And that would -- go ahead.
Q. No, I didn't mean to cut you off.
A. It's all right.
Q. Other than for individuals with cancer, are you able to describe any other situation where

atrophied tissue is surgically removed, other than gender affirming surgeries?

MS. HUPPERT: Sorry, I did not mean to interrupt. My bad. Objection to form.

A. So there are conditions such as hemifacial atrophy, hemifacial microstomia -- hemifacial atrophy, fat atrophy, which may occur, and are treated -- surgically treated with the addition of fat, for example, lipofilling or for facial surgery.

Q. And is lipofilling a medically-necessary procedure?

A. Can be, depending on the indication.

Q. In the instance of someone who has atrophy to their calves, would lipofilling be a medically-indicated or a medically-necessary procedure?

MS. HUPPERT: Object to form.

A. It would be possible depending on the indication for that. Someone could be in a traumatic situation, have a congenital situation that resulted in atrophy for which they might seek reconstructive surgery.

Q. And reconstructive surgery can be different

than lipofilling, correct?

A. Well, as I said, there's no procedures that are specifically cosmetically constructed. It's the basis upon which the procedure is performed.

Q. And I'm specifically asking you about lipofilling for calves. That's the specific procedure. Is that a medically-necessary procedure?

MS. HUPPERT: Object to form.

A. So it would depend on the clinical circumstances. If someone had a birth-related condition from that, post-traumatic condition, lipofilling may be indicated and considered medically necessary.

Q. Have you ever performed a lipofilling of a calf that you -- that was medically indicated and therefore medically necessary?

A. I have performed medically necessary lipofilling procedures, meaning procedures performed for reconstructive purposes, on the face, the breast, genitalia, arms, forearms, thighs.

I can't say -- I can't say specifically calf.

Q. And were any of those procedures that you

just described done outside of the context of gender affirming surgery?

A. Yes.

Q. Okay. And what were the indications for those procedures that were outside the context of gender affirming surgery?

A. They can be post-traumatic, post-oncologic, birth-related, effect of infection, radiation, previous surgeries. That may not be completely enumerative, but I think that that is a reasonable range.

Q. And in each of those instances that you just described - trauma or infection - you're talking about physical injuries to the tissue, correct?

MS. HUPPERT: Object to form.

A. I have, I believe -- well, no, not necessarily all have physical injuries. Birth-related conditions may not be a physical injury consistent with how we're discussing trauma or cancer here.

Q. And those birth-related issues, were they affecting the patient's functionality?

MS. HUPPERT: Object to form.

A. Again, so for conditions like hemifacial atrophy, hemifacial microsomia resulting in an obvious and overt discrepancy in appearance between the two sides of the face, those can and often are considered re -- well, they're considered reconstructive, and would not be uncommon to be reimbursed by a third party payer.

Q. When you say "wouldn't be uncommon to be reimbursed," does that mean that there are times where it's not reimbursed by a third party payer?

A. I can't conceive of every situation in which I've treated and whether a third party payer has agreed to pay, but a decision for medical necessity -- or if the physician, based upon their examination and opinion of the patient, that would determine medical necessity.

Whether insurers ultimately pay is a different question. I mean, it wasn't until 1998 that breast reconstruction was covered.

Q. So other than in the situation of a predispositioned cancer or when only one breast is affected by cancer and both breasts are removed in a double mastectomy, are you aware of any other procedures outside of gender affirming care where

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healthy tissue is removed from the body?
MS. HUPPERT: Object to form.
A. Well, I don't describe it as necessarily "healthy tissue" in the sense that it's the etiology of the medical condition.
Q. And a little bit ago, you told me that you do not actually diagnose this, and you refused to answer some questions. So what is it about the medical condition now that you're in tune with exactly what the diagnostic criteria are?
MS. HUPPERT: Object to form. Object to characterization of the prior testimony.
A. I'm sorry, "diagnose this" meaning -- you said "diagnose this."
Q. Diagnoses or the diag -- so now, let's talk about the diagnostic criteria for gender dysphoria. What are they?
MS. HUPPERT: Object to form.
A. As I said, I don't diagnose gender dysphoria.
Q. Okay. So what is it about -- in a transgender man, what is it about the breast tissue that requires it to be removed in a double mastectomy?

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MS. HUPPERT: Object to form.
A. So not all transgender men request removal of breast tissue. That's typically done in a -- it's done in appropriately-selected individuals, typically for the diagnosis of gender dysphoria and with the goal of aligning one's body with their identity.
Q. And why is it only required or medically necessary for certain individuals?
MS. HUPPERT: Object to form.
A. Well, not all transgender individuals want surgery, want all types of surgery. That depends upon the decision to proceed with the surgery, the decision between the physician and the individual seeking treatment, and it's based on the individual facts of the case.
Q. And what is -- what are those individual facts that are necessary for surgery to be indicated?
A. Typically gender dysphoria is the indication, and then - as with any medical intervention - the individual will consider the treatment options and, in conjunction with their physician, make a determination of how to proceed.

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Q. And are you aware of any lab tests that would be useful in determining whether a patient requires a double mastectomy for gender dysphoria?
MS. HUPPERT: Object to form.
A. I -- there's a variety of lab tests that people may have to undergo prior to surgery.
Q. Okay. Are you aware of any that would be necessary and would indicate that a patient requires a double mastectomy for gender dysphoria?
MS. HUPPERT: Object to form.
A. So regardless of the diagnosis, lab tests don't require an individual to seek an intervention or not seek an intervention. They may or may not be one part of the ultimate decision-making process.
But the ultimate decision as to whether or not to proceed with the surgical intervention is a decision between the physician and the individual seeking treatment.
Q. Do you require lab tests from patients prior to performing gender affirming surgeries?
A. We typically do get labs prior to surgery. Rather, independent of gender identity.
Q. Right. Okay. So are there any that are

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specific to gender identity that you require for -- prior to gender affirming surgery?
MS. HUPPERT: Object to form.
A. The lab tests that we require are typically labs such as blood count, electrolytes, urinalyses, and then there may be other labs - x-rays, diagnostic tests - that are performed prior to surgery based on an individual's medical condition.
Q. Is there anything on a CBC that is diagnostic for gender dysphoria?
MS. HUPPERT: Object to form.
A. Again, I don't make the diagnosis of gender dysphoria.
Q. Okay. Are you able to answer that question?
MS. HUPPERT: Object to form.
A. We require a CBC for -- pre-operatively in most individuals undergoing surgery.
Q. And why do you require a CBC?
A. We want to check their hemoglobin level, their platelet level, their white blood count to assess for anything that may be of concern.
Q. Is someone's white blood count affected by their gender identity?

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MS. HUPPERT: Object to form.
A. Again, I'm not -- I don't make the diagnosis of gender dysphoria, nor am I a primary care professional, so might there be lab issues that I am unaware of? It's possible.
I'm obtaining the labs to perform the surgery in a safe, safe manner.
Q. Okay. Are you aware of medical literature that would suggest that lab values have any link to a person's gender identity?
MS. HUPPERT: Object to form.
A. There may be lab values that are pertinent based on the individual's medical condition and previous medical treatments which may be related to their medical diagnosis of gender dysphoria that may impact lab values and may need to be addressed prior to surgery.
Q. Are you aware of any medical literature that links a CBC to someone's gender identity?
MS. HUPPERT: Object to form. Asked and answered.
A. Again, I'm performing the CBC for the purpose of evaluating them for surgery, not to diagnose them with gender dysphoria.

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Q. And are you aware of any values on a complete metabolic panel that would be linked to someone's gender identity?
MS. HUPPERT: Object to form.
A. Again, while I -- we typically -- we don't always get a complete metabolic panel. It's typically less than that, a basic metabolic profile.
Again, I don't make the diagnosis. We often obtain that information for the purpose of looking at kidney function, electrolytes, and performing surgery in a safe, safe manner.
Q. Are there any lab values you use post-surgery to determine whether your surgery was successful for treating gender dysphoria?
MS. HUPPERT: Object to form.
A. We obtain lab values post-surgically, but again, it's within the context of the surgical care, not within the context of the medical condition gender dysphoria. Unless treatments for that dysphoria was -- caused them to be on other medications that may influence lab values.
Q. But there's nothing that you pull up after you do surgery, you get lab work and you pull it up and say, "Wow, this shows that you're doing a lot better after this surgery for your gender dysphoria."
There's nothing on a lab value that would actually show you that. Correct?
MS. HUPPERT: Object to form.
A. As with many medical conditions, lab values may or may not be helpful in terms of the overall diagnosis. I don't have a lab value that I would order to -- that I order to assess their level of gender dysphoria.
Q. Are there vital signs that you take to assess someone's level of gender dysphoria?
MS. HUPPERT: Object to form.
A. Well, in the sense that there are medical -- that medical conditions -- that -- can have somatic manifestation, we monitor everything: Vital signs, medication, lab values.
Q. And do you monitor vital signs specifically to determine whether or not someone has an increased or decreased level of gender dysphoria?
MS. HUPPERT: Object to form.
A. We monitor the vital signs in relation to their recent surgery, and that helps us make

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determinations. Many things go into vital signs, especially in the peri-operative period: Pain, stress, anxiety, blood loss, fluids. All of those may have an impact on vital signs.
Q. Let's say six months after surgery, do you take a patient's vitals to see if their heart rate has increased or decreased as a result of an increase or decrease in the effects of gender dysphoria?
MS. HUPPERT: Object to form.
A. So our medical assistant typically takes vital signs with both pre- and post-operative visits.
Q. And do you take those vital signs and use those as a tool to measure the effects of gender dysphoria on a person?
MS. HUPPERT: Object to form.
A. I incorporate all medical information in terms of the overall person, and if there are abnormalities in vital signs, then we want to address them.
Q. So how does gender dysphoria affect heart rate?
A. Again, I'm not a primary care physician,

but if someone had an elevated heart rate, I would speak with their primary care professional to ascertain as to why.

Q. How does gender dysphoria affect blood pressure?

A. Again, in a similar way that -- my primary clinical area is not the investigation of blood pressure. But should someone have low blood pressure, problematically low blood pressure, hypertension, we would want that -- conversely to hypotension, we would want that communicated with their primary care professional.

In conjunction with them, they would make a determination as to what factors may impact that.

Q. Are you aware of any medical literature that links tachycardia, bradycardia, hypotension or hypertension to gender dysphoria?

MS. HUPPERT: Object to form.

A. Physical manifestations of medical conditions can occur and do occur.

Q. And are you aware of any medical literature that links tachycardia, bradycardia, hypotension or hypertension to gender dysphoria?

MS. HUPPERT: Object to form.

A. Again, I don't treat tachycardia, bradycardia, hypotension or hypertension, but medical conditions can impact those parameters.

Q. Okay. Can you please list all medical literature that you're aware of that links tachycardia, bradycardia, hypotension or hypertension, to gender dysphoria.

MS. HUPPERT: Object to form.

A. Again, I don't make a diagnosis of gender dysphoria; nor do I treat tachycardia. In the peri-operative period, I do have to be very aware of vital signs. Tachycardia, bradycardia, hypotension, hypertension, can be a manifestation of multiple issues.

Six months following surgery, I would typically refer them to their primary care professional to make that determination.

Q. Okay. When you are assessing whether your surgery, your gender affirming surgery, was successful, what objective findings do you look at?

A. So patient goals and expectations as we would with most or many plastic surgeries. Whether those goals and expectations have been met. How

they're healing in terms of the incisions, the integrity of the incision, other parameters: Sensation, pain.

And then patient overall reports of how they're doing.

Q. Are patient goals an objective finding?

MS. HUPPERT: Object to form.

A. Those are what we refer to as patient recorded outcome measures. So patient goals are what the patient, obviously, would like to achieve from surgery.

Whether those are achievable or realistic is part of the surgical -- the pre-operative discussion with the person seeking the intervention.

The ability to measure that is an increasing area of interest, both in plastic surgery -- in plastic surgery, as well as within gender affirming surgery.

Q. Are patient goals an objective or subjective finding?

MS. HUPPERT: Object to form.

A. Again, translating goals into what we call patient reported outcome measures, are the goals --

is that one of the goals is to be able to objectively assess whether goals are met by a procedure.

Q. Can patients lie?

MS. HUPPERT: Object to form.

A. Anybody can lie.

Q. All right. And so the patient could tell you that they have a bad outcome when they had a good outcome; or they could tell you that they had a good outcome when they had a bad outcome, correct?

MS. HUPPERT: Objection to form.

A. That doesn't imply lying.

Q. Okay. So a patient can report to you different goals than they actually have, correct?

MS. HUPPERT: Object to form.

A. That's part of the importance of the pre-operative assessment, so that it's not only the surgeon identifying -- working with the patient, but also other professionals.

Q. There is no lab value that tells you a patient goal, correct?

MS. HUPPERT: Object to form.

A. Well, I can't -- there are -- again, not

within necessarily the area of plastic surgery, but patients may have goals on hormone levels, maybe a goal as to a blood count, if someone has anemia. So it would depend a bit more on what you mean by "goals."

Q. Has any patient told you that they would like gender affirming surgery to affect their iron levels for anemia?

A. So individuals may be anemic - not uncommon - prior -- trans women, prior to undergoing surgery. And in fact, we often use iron prior to surgery to elevate their hemoglobin.

Q. But the surgery itself is not going to cure that, right?

A. Surgery -- gender affirming surgery is not to be performed for the indication of any (inaudible).

Q. And you can't do an MRI and determine a patient's goals, correct?

A. Again, it would be more specific for what you want. People try to estimate goals regarding breast size, post-operative appearance, using various facial morphing strategies and so forth.

So in the context of, for example,

imaging software, pre-operative photographs, you can sit with a patient; they can identify what their particular concerns are and what their goals are, and you can make a mutual decision as to whether those goals are achievable and/or realistic.

Q. My question was: Can you do an MRI and determine a patient's goals by looking inside their body?

MS. HUPPERT: Object to form.

A. Again, you can do imaging tests to look, for example, at breast volume; you can do imaging tests to look at volume in other areas of the body, to assess whether if you transfer tissue from one area of the body to another, whether you will achieve their goal.

So not trying to be glib. It's a bit of a broad question that you're asking in terms of, you know, "Can you use an imaging study, i.e., MRI"?

Studies have been used with people to understand what are achievable in their goals or what is not achievable.

Q. And I'm asking if you can do an MRI study

to determine what someone's goals are -- not to look at parts of their body that they have already looked into to goals for. Can I look in someone's forearm and say, "Oh, well, that's where they keep their goals."

It's not there, right? You're not going to see that on an MRI.

MS. HUPPERT: Object to form.

A. I mean, we use imaging of the forearm routinely in plastic surgery, you know, to look at anatomy, to look at the tissue in terms of performing various flaps, so it's commonly used, and if there's a concern with that, we would say we can't use that forearm; we have to look at another -- another body part.

So in the context of someone wants their forearm but it's not suitable, I guess that helps them determine their goals.

Q. How are patient goals communicated to you?

A. Typically, people articulate their goals, verbalize their goals. We discuss them; we review the assessment of the -- the pre-operative assessment, and that would be the typical manner by which we hope to come to a mutual understanding as

to what goals are.

Q. Without that communication, is there any other way for you to determine a patient's goals?

MS. HUPPERT: Object to form.

A. Communication would be an important part of determining those.

Q. Without that communication, are you able to do a lab test and determine a patient's goals?

MS. HUPPERT: Object to form.

A. Communication would be the primary or principal methods of determining goals. We would then use adjunct studies, labs, imaging studies, as necessary to help arrive at a mutually-decided-upon course of treatment.

So while one person may have goals, those goals may shift after a discussion of the various procedures.

Individuals may or may not have an understanding of the realm or range of possibilities that are or are not available to them.

Q. I'll try this one more time. If I go and get lab work and just send my lab work to you, can you tell me what my goals are?

MS. HUPPERT: Object to form.
A. As I said before, the principal methods of articulating goals would be communication with the patient. That's not to say, though, that other studies don't play a role into that shared decision-making process.
Q. And if I just send you a CT scan or an MRI and nothing else, can you tell me what my goals are?
MS. HUPPERT: Object to form.
A. I can't tell anybody -- you know, I can't make a recommendation as to treatment without seeing anybody. So regardless of one's gender identity, I need to sit and speak with the person regardless -- and examine the person, regardless of the medical condition for which they're seeking an intervention.
Q. And if I send you lab work and nothing else, can you tell me what my gender identity is?
MS. HUPPERT: Object to form.
A. I -- again, I don't make medical decisions based on an isolated lab value without examining and speaking with the patient or their caregiver or -- caregiver or power of health attorney depending

upon the medical position.
Q. Is pain an objective or a subjective finding?
A. Pain is typically communicated by the patient based on - most often in the hospital - on a scale of 1 to 10. How individuals may perceive pain may differ between individuals.
Q. Is there a similar scale for patient expectations?
A. Again, the expectations are typically a mutual discussion, a mutual understanding between the patient and the individual.
Q. So when you are determining whether your surgery has reduced the level of someone's gender dysphoria, what do you assess to determine that?
A. That's typically a discussion and communication with the patient, as it is for many areas of plastic surgery, outside the realm of gender affirming treatment.
Q. Now, today and in your written report, you talk a lot about the similarities between the procedures, double mastectomy for a transgender man and for someone who is experiencing cancer, whether they're cisgender or not, but someone experiencing

cancer and having a double mastectomy.
So can you explain to me why those procedures are the same to you?
A. Again, individuals don't need to have cancer to have a double -- to have a bilateral mastectomy or what we call risk reduction mastectomy. Those may be individuals who are at an increased risk of breast cancer.
That doesn't mean that they will ultimately go on to have breast cancer, and similarly, they can opt not to undergo mastectomy, and they can choose other intervention or no interventions.
So the technical act of a mastectomy, in one indication, may be performed for cancer, to reduce a risk of cancer, or to reduce or alleviate gender dysphoria.
Q. And your testimony is that the procedure is the same regardless of the indication; is that right?
MS. HUPPERT: Object to form.
A. There is a wide range of indications or techniques used to perform mastectomy, whether for gender affirming mastectomy or for a mastectomy

pertaining to oncologic reasons or for risk reduction mastectomies, meaning removing a breast that is not cancerous but may have an increased predilection or risk of breast.
There are different ways to perform that mastectomy, so as to how it would be performed compared to a gender affirming mastectomy, again, would depend upon the specific situation.
Q. Now, you've said over and over again in your written testimony that these procedures are safe. And one of the reasons that you say that they're safe is they're the same surgical technique. Is that a true statement or not?
A. Yes, the surgical techniques are the same or similar, but you're asking me to compare two unknowns. A nipple-sparing mastectomy for cancer is different than a nonnipple-sparing mastectomy for cancer. A skin-sparing mastectomy for cancer is different than a nonskin-sparing mastectomy for cancer.
So there are a range of different techniques, but asking me to compare two specific situations, I would need to understand the two specific situations.

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Q. And I'm -- you do not make that sort of a designation within your written report that says that, "Well, there are certain types of surgical techniques that I would use for cancer compared to surgical techniques that I would use for gender dysphoria." You don't make that a distinction in your report, do you?

MS. HUPPERT: Object to form.

A. There are a range of mastectomies that are performed based on the clinical conditions.

Q. I'm going to quote from page 32 of your original report: "The fact that the medical community deems these analogous procedures sufficiently safe to treat conditions other than gender dysphoria is, by itself, more than sufficient to support the safety of those surgeries to treat gender dysphoria."

Is that a true statement?

A. Yes.

Q. Okay. Do you state in here that there are different surgical techniques for mastectomy procedures for cancer patients than there are for gender dysphoric patients?

MS. HUPPERT: Object to form.

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A. I didn't say they're necessarily different. I said there's a range of mastectomy procedures that may be performed for treating cancer or for reducing risk of cancer. The decision as to which type of mastectomy to be performed is a decision between the doctor and the patient.

There are a range of mastectomies that may be used to -- within the realm of gender affirming surgery, and they are all similar -- they're all similar techniques.

Q. Is there any techniques that are techniques for removing cancer that are not used for a gender affirming surgery?

A. A modified mastectomy with lymph node removal would unlikely be used for gender affirming mastectomy in the absence of cancer.

Q. Are there any other types of techniques that would be used for cancer but not for gender dysphoria?

MS. HUPPERT: Object to form.

A. Again, mastectomies for cancer - either cancer or predilection or risk of cancer - run the gamut of procedures. Typically for gender affirming surgery, we would not sample lymph nodes.

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Most often for risk reduction mastectomies, individuals also do not sample lymph nodes.

For cancer surgeries which may be more invasive, they may sample lymph nodes.

Q. What are the morbidity rates of cancer versus gender dysphoria?

A. Well, depends what you -- cancer is a broad -- broad term.

Q. I agree, and your report just says "cancer." So that's why I'm asking you about cancer. What are the morbidity rates for cancer versus gender dysphoria?

MS. HUPPERT: Object to form.

A. I don't treat cancer. I may treat -- perform a mastectomy for risk reduction of cancer. But I'm not the oncologist who would treat cancer and would be able to answer a question regarding -- I forget what you said.

Q. Morbidity.

A. The viable -- morbidity of cancer. I would need to know more about the specifics and whether or not I treat that specific cancer.

Q. Do you know what the rates of morbidity are in people pre- and post-operative for reduction

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mammoplas -- or mastectomies, reduction mastectomies?

A. Again, that's a broad category, and it would depend upon the reason upon which a mastectomy was being performed.

In the area of risk reduction mastectomy, those are performed on individuals who have an increased risk, for example, of breast cancer and may -- and significantly reduce the risk - but don't eliminate the risk - of subsequently developing breast cancer.

Q. And that's -- do you know what the reduction in risk is from a risk reduction mastectomy?

A. You know, again to answer a specific question, I would need specific -- specific facts. It tends to be the -- it tends to be the intervention that provides the most significant risk reduction in terms of reducing the risk of cancer.

Not complete -- we used to call them prophylactic mastectomies, but we recognize that not everyone who undergoes a mastectomy with the hope of preventing cancer is successful.

Q. What is the morbidity rate of gender dysphoria?

A. Again, it needs -- you need to be more specific. I treat -- I perform surgery for gender dysphoria.

Q. What is the rate of gender dysphoria for individuals who do not undergo surgery?

MS. HUPPERT: Object to form.

A. Again, I -- most of the individuals that I see do undergo surgical intervention for gender dysphoria.

Q. How are you able to measure the effectiveness of your treatments if you don't know what the effects are pre-operatively?

MS. HUPPERT: Object to form.

A. I don't -- I'm sorry, I don't know what -- "What the effects are pre-operatively" means. Everyone is assessed not only by me, but undergoes a multi-disciplinary assessment as well.

Q. What's the suicidality rate of individuals with gender dysphoria who do not undergo surgery?

MS. HUPPERT: Object to form.

A. That is, again, a very broad question, because not all individuals who have gender

incongruence or gender dysphoria either seek or have access to medical and surgical interventions, and not all individuals request or require surgical interventions.

So to say, you know, for someone who may not want to request a procedure or may not be a candidate for a procedure, I don't think is an accurate comparison.

Q. What does the medical literature say is the reduction in suicidality after a patient undergoes gender affirming surgery?

MS. HUPPERT: Object to form.

A. So again, the indication for surgery is reduction -- is the alignment of body and gender identity, meaning gender dysphoria. While suicidality may also be lower for individuals following gender affirming surgery, the principal reason for treatment is gender dysphoria.

Q. So are you able to tell me what specific markers that you use to determine whether your treatment of gender dysphoria is effective?

A. So that is, again, primarily discussion and communications with the individual, as it is with many areas of plastic surgery.

Q. Okay. Do you perform nonbinary surgeries?

A. I'm sorry, you cut out.

Q. Do you perform nonbinary surgeries?

A. I operate on individuals who identify as nonbinary.

Q. And when I'm referring to nonbinary surgeries, I'm referring to ones that do not -- the end result is not someone having a penis or a vagina, such as a nullification surgery.

Do you perform nullification surgeries?

MS. HUPPERT: Object to form.

A. I have not.

Q. Okay. Have you performed phallus-preserving vaginoplasty?

A. I have not.

Q. Do you know the standard for informed consent in West Virginia?

MS. HUPPERT: Object to form.

A. In reference to?

Q. To any medical procedure in West Virginia. Do you know what the standard of -- what the informed consent standard is?

MS. HUPPERT: Object to form.

A. For an adult?

Q. Sure. For an adult.

A. I know what the medical community means by "informed consent." Whether there's a different definition of consent in West Virginia or whether the State has something aside from the usual medical definition of informed consent, I don't specifically know.

Q. Okay. And what is your definition of informed consent?

MS. HUPPERT: Object to form.

A. An individual -- it must be voluntary, so noncoerced. Individual should be informed of the risks, benefits and alternatives of procedures. And typically there is a legal -- there's an age that may or may not be associated which may vary depending -- for health care depending upon the particular state, and the individual has to be competent to make a decision.

Q. How do you determine whether a patient is competent to make a decision?

A. As I have for 28 years of medical practice, their absence of delusion or psychoses, again as we've said. There may be -- age may be --

typically the legal age is 18, although there may be variations in particular states for health care consent or emancipated minors and so forth.

So that person is oriented, nondelusional, no psychoses, their judgment's not altered by -- or under the influence of a particular substance. Those would be: They're alert; they're aware of time, place, location.

Those would be the usual considerations.

Q. Are there specific considerations for competency that you undergo prior to gender affirming surgery?

A. So while the surgeon will ultimately decide whether or not to operate on an individual, the pre-operative process requires an assessment process so that there are additional individuals involved in the decision-making and assessment of the person seeking treatment.

Q. Okay. Who is involved in that process?

A. There are other individuals, maybe mental health professionals, behavioral health professionals, primary care professionals, who perform assessments - depending on the nature of

the procedure - prior to undergoing -- prior to recommending surgery and prior to the patient undergoing surgery.

Q. Prior to a gender affirming surgery, do you require a mental health assessment?

A. Yes.

Q. Do you require a mental health assessment for nongender confirming surgeries, for anything other than gender confirming surgeries?

A. It can, depending on the type of surgery, so individuals may have mental health conditions -- and I'm speaking outside -- now, this is for individuals who do not have the medical condition of gender dysphoria but may want other nongender affirming treatments.

If there are questions, concerns, history of mental health conditions, they very well may seek additional assessment. That might be a mental health professional, a behavioral health professional, might be other medical -- medical consultants or surgical consultants.

It's really based on the need of the patient. But psychosocial assessments are performed routinely in other fields of surgery -

transplant surgery, bariatric surgery - and in fact, there's an evolving area of prehabilitation to specifically assess individuals undergoing a variety of procedures for psychosocial risk factors.

Q. Do you require a mental health assessment prior to performing a mastectomy for cancer?

A. Again, it would depend upon the particular situation. So for individuals who are undergoing mastectomy for risk reduction mastectomy, there are times where they will be referred to or seek pre-operative psychosocial assessments.

That may be a mental health professional, behavioral professional, a therapist, because the implications of surgery may affect -- may affect a variety of factors in their life.

Q. So in terms of a mastectomy for cancer, it's on a case-by-case basis. For a mastectomy in a gender affirming procedure, it is a requirement.

A. That is correct.

Q. Okay. And why is that?

A. Well, I think the importance of having a multi-discipline -- or the multi-disciplinary assessment is very important, and in fact, I would

argue that it should be extended to other areas of surgery. As we said, routinely in transplants and bariatric surgery.

So I think looking for potential issues that may affect or impact one's surgical outcome is important. I think it's important for patients to hear not only from the surgeon, but from other professionals who may help shape or guide their decision-making processes.

And again, not all individuals will ultimately opt for a surgical intervention or the entire range or spectrum of procedures that are available.

Q. Are you familiar with patient needs standard of informed consent?

A. I'm sorry, you said "patient" --

Q. Are you familiar with the patient need standard for informed consent?

A. Need, N-E-E-D?

Q. Yes.

A. I'm familiar -- as I said, I'm familiar with the definition that I described previously. I'm not familiar with the addition of the term "N-E-E-D, need."

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Q. What do you tell a patient are the risks of a procedure -- we've talked about vaginoplasty already, so let's just stick with that. What do you tell a patient are the risks of a vaginoplasty for -- with the indication of gender dysphoria?

A. So there are risks of any procedure: Bleeding; infection; fluid accumulations or seroma; wound disruptions or delayed healing; tissue loss, tissue necrosis; injury to adjacent or other structures. In the case of a vaginoplasty, that may be injury to the rectum, urethra, bladder.

The procedure -- there may be systemic risks such as venous thromboembolism. Patients may be unhappy with the procedure.

The procedure is sterilizing, so they will not be able following -- unless they have undergone, for example, sperm preservation, they will not be able to produce sperm after the procedure.

That there will be after-care requirements. They'll need to care for, potentially, drains, urinary catheters. There may be pain, redness, drainage from the incision.

They'll need -- assuming they're

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undergoing construction of a full vaginal canal, they'll need to dilate following surgery. So when patients see me in the office, I'll also meet pre-operatively with our pelvic floor physical therapist.

We'll go over many of these issues, including dilation, issues related to personal hygiene, bowel and bladder assistance, should they need that.

I'll meet with our social worker to discuss the pre-operative -- after-care plans for surgery. If patients are traveling, it will depend on who is able to accompany them, whether or not they'll need a skilled nursing facility following surgery.

How much time due to the nature of their work, do they have to take off work. They may be unhappy with the results of surgery.

I may be missing a few, but those are largely the pre- and post-operative discussions that I have, our physical therapist has, our social worker has.

I'll typically meet as well with our -- one of our APP's, Advanced Practice

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Practitioners, or for example, a physician assistant, who may also go over additional logistic information with them and then, of course, insurance-related issues, the need for assessments, pre-operative assessments, as we've just discussed, whether or not there are other lab tests, x-rays, mammograms, things of that nature, that need to be undertaken.

Smoking cessation, risks of smoking. We don't perform certain procedures on individuals who are actively smoking, and we test for nicotine in the urine. That would be a -- kind of a typical consultation.

Q. Do you tell patients that you cannot guarantee that they will -- that the procedure will alleviate the distress that they're feeling?

MS. HUPPERT: Objection.

A. I --

MS. HUPPERT: Pardon me. Object to form.

You can answer.

A. We tell people that they may be unhappy with the results of surgery, that there are other forms of treatment for gender dysphoria, some of

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which may or may not be helpful for them, so that they are aware.

That while surgery is useful for many people, other people may decline surgery or choose not to undergo surgery.

Q. Do you tell patients that some people will still not consider them to be the gender that they're seeking to appear as?

MS. HUPPERT: Object to form.

A. Well, we do discuss -- and that's important, I think, as part of the multi-disciplinary assessment, is again what the expectation of surgery is. Surgery is to align one's body with their identity, but there may be family relationships, personal relationships, professional relationships that may be impacted by surgery, and surgery is not a cure or a fix-all for those.

The specific goal of surgery is to align one's body, you know, with -- with their mind.

Q. What benefits do you tell patients that they might obtain?

A. Again, the goal is congruence of their body

and their identity. There may be other -- for a transgender man seeking mastectomy who may have back pain, neck pain, a variety of other issues that may be related to binding or large pendulous breasts, there may be other benefits from that in terms of pain, posture, neck pain, back pain and so forth.

Q. Are you familiar with the Branstrom and Pachankis study?

A. I am.

Q. Okay. Do you disclose the results of that study to your patients?

A. I don't discuss typically individual studies with patients. If patients ask about a particular study, if I'm aware of it, I'll discuss it. If I'm not aware of it, I'll look it up.

Q. And that particular study was retrospective, right?

A. I don't recall. If you have it and want to put it up, I can --

Q. I can pull it up for you. And I'll see if I can't make it a little bit larger. I think it gets bigger after the --

A. I don't know. Maybe you can hit that --

you know, that box. That might help -- you know, the box up in the -- no, the -- by the X up on the upper --

Q. Oh.

A. Yeah.

Q. Oh, I didn't realize it was doing that. I'm sorry.

A. That's okay.

Q. All right. So you're familiar with this "Reduction in Mental Health Treatment Utilization Among Transgender Individuals After Gender-Affirming Surgeries: A Total Population Study."

A. I am.

Q. And you can see in the Methods section that they used the Swedish Total Population Register which is linked to the National Patient Register and the Prescribed Drug Register and they looked at individuals who received a diagnosis of gender incongruence between 2005 and 2015.

Mental health treatment in 2015 was examined as a function of length of time since gender affirming hormone, surgical treatment. Outcome measures were mood and anxiety disorder health care visits, anti-depressant and anxiolytic

prescriptions and hospitalization after a suicide attempt.

A. I mean, I agree. Yeah, that's what you described. And that's what it says, yes.

Q. So mood and anxiety health care visits are something that we could count, right?

A. I mean, I don't -- you know, I can't speak to exactly how they do that in Sweden. It's not part of my clinical practice. But I believe they are able in this study to count them.

Q. And antidepressant and anxiolytic prescriptions, you can count those too, right?

A. Again, I can't speak in generalities as far as how people -- I can speak to what they said in the study, but I can't speak to the veracity of how they did the quantification of these methods. They appeared -- they appeared to quantitate them or attempt to quantitate them.

Whether it's accurate or not, you know, that I can't specifically speak to or how Sweden monitors prescription and so forth.

Q. Sure. And then hospitalization after a suicide attempt is also something that you can count, correct?

MS. HUPPERT: Object to form.

A. Again, that's what their methodologies -- you know, I can't speak to the integrity of their methodology, but yes, that's what they are reporting in the Methods section of this study.

Q. Thanks. And I'm just saying that that's something that you, if you were examining this within your own patient population, you could count the number of hospitalizations after a suicide attempt, right?

MS. HUPPERT: Object to form.

A. Presumably. But it would be more difficult as we don't have a total population register in the United States, so --

Q. Well --

A. -- there are going to be some differences in how things are going to be done.

Q. Okay. And the Conclusion of the study - I'll just read it - "In this first total population study of transgender individuals with a gender incongruence diagnosis, the longitudinal association between gender affirming surgery and reduced likelihood of mental health treatment lends support to the decision to provide gender affirming

surgeries to transgender individuals who seek them."

Did I read that correctly?

MS. HUPPERT: Object to form.

A. I would say you read it correctly.

Q. Okay. And are you aware that two months after this was published, Branstrom and Pachankis issued a correction to this?

A. Yes. I believe the Journal issued -- I don't know if it was the authors, but I am aware that there was a correction. I don't know who authored the correction.

Q. Okay. And I don't know if this -- I just pulled up -- I don't know where it's from exactly.

MS. HUPPERT: Counsel, for clarity of the transcript, do you intend to mark this as an exhibit?

MR. DAVID: I wasn't planning on it, no.

Q. I don't know what my screen is showing right now. So right now, is it showing the original article?

A. It's showing the first page of the original.

Q. Okay. And now is it showing something that says, "Correction to Branstrom and Pachankis?"

A. It does.

Q. Okay. And about halfway down where it's highlighted, this specific -- where I've highlighted the word "Given," they state: "Given that the study used neither a prospective cohort design nor a randomized controlled trial design, the conclusion that 'The longitudinal association between gender affirming surgery and lower use of mental health treatment lends support to the decision to provide gender affirming surgeries to transgender individuals who seek them' is too strong."

Did I read that correctly?

A. It is read --

Q. Okay.

A. It was read correctly, yeah.

Q. And the sentence right before that says, "While this comparison was performed retrospectively and was not part of the original research question given that several other factors may differ between the groups, the results demonstrated no advantage of surgery in relation to

subsequent mood or anxiety disorder-related health care visits or prescriptions or hospitalizations following suicide attempts in that comparison."

MS. HUPPERT: Pardon the interruption. Objection to form.

Counsel, we would also ask that you introduce both of these as exhibits for clarity of the transcripts.

MR. DAVID: That's fine. Mark the original as Exhibit 1 and the correction as Exhibit

MS. HUPPERT: Thank you.

SCHECHTER DEPOSITION EXHIBIT NOS. 1 and 2

(Article entitled "Reduction in Mental Health Treatment Utilization Among Transgender Individuals After Gender-Affirming Surgeries: A Total Population Study" by Richard Bränström, Ph.D. and John E. Pachankis, Ph.D. and the correction to said article were marked for identification purposes as Schechter Deposition Exhibit Nos. 1 and 2.)

Q. Now, Doctor, do you disclose to your patients that there is a study that says -- that

found that there is no advantage of surgery in relation to subsequent mood or anxiety disorder-related health care visits or prescriptions or hospitalizations following suicide attempts in their study?

MS. HUPPERT: Object to form.

A. Yeah, so my indication for surgery is gender dysphoria, not mood or anxiety prescriptions. So the indication for surgery is gender dysphoria, and this study did not look at gender dysphoria. That's one -- one consideration with this particular study.

And the fact that individuals need ongoing care or support is not unique to the individual in gender affirming intervention.

Since we've been talking about cancer all day, someone may undergo a mastectomy and there's expectations that they'll continue to follow with their oncologist or -- medical oncologist, radiation oncologist, surgical oncologist, plastic surgeon.

So that people may continue to seek treatment, whether medical or mental health, is really of -- of no surprise.

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But can you go back to the original article? Okay. Can you scroll down for me more?

Q. Yep.

A. And keep -- just keep -- okay, next page. Let's see. Can you keep going? Keep going. Keep going. And keep going. And keep going. I'm sorry, keep -- I apologize.

Q. No, you're fine.

A. Okay. Keep going. Okay, let's see. Thank you. Keep going. Okay, yeah.

So this: What's interesting is that in anyone after three years following surgery, there were no suicide attempts in these individuals.

So again, gender affirming surgery is not a treatment specific for suicide, but what I did find interesting was that there were no suicide attempts in individuals who were out three years from surgery, and I believe the authors comment on this.

So you know, the fact that individuals may seek additional mental health care, I would encourage people who need mental health care to seek that. And the problem is if we deny or

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stigmatize mental health care, and again, try to prevent the important ongoing access to medically-necessary care.

So I don't specifically - to answer your question - disclose this study, because it doesn't answer the question of gender dysphoria, and the fact that people may need ongoing care is not unique to gender affirming surgery.

Q. And so my question is: Do you disclose this to your patients?

MS. HUPPERT: Object to form.

A. As I just said, I don't find anything in this article that is inconsistent, or A, that speaks to treatment of gender dysphoria specifically; or B, would indicate that the need for ongoing care is somehow, you know, representative of the efficacy of surgery.

Q. And so in patients who -- you mentioned cancer again. Patients who have cancer and undergo a mastectomy, you were able to determine afterwards whether you were able to remove a cancerous mass, correct?

MS. HUPPERT: Object to form.

A. We hope so. Not always. It depends on the

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nature of the cancer, whether it's spread in the lymph nodes. People who, again, have risk reduction mastectomies who don't have cancer, sometimes you do find cancer in those specimen.

But those individuals still require ongoing follow-up in that area --

Q. And that's what --

A. -- both personal and professional -- both self breast exams, for example, and physician-guided exams.

Q. And the follow-up for patients with cancer include PET scans to determine if there were any more potentially malignant areas, correct?

A. Again, that would depend on the type of cancer that was involved. Whether additional studies are needed or not needed would depend on the specifics at the time.

Q. And for patients with gender dysphoria, were you able to do a scan after a surgery to determine the level of gender dysphoria?

A. Again, the resolution or reduction of dysphoria is typically communicated by the individual, and the fact that an individual may request or require ongoing mental health is really

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not particularly relevant as to the need for surgery.

I would encourage anyone - whether they have gender dysphoria or not - who feels they need mental health care to seek it.

Q. Are you familiar with -- and I'm -- I apologize. I'm going to absolutely butcher this. -- the Dhejne study?

A. Yes.

Q. How do you pronounce that?

A. I say -- I may not be much better. I prefer to call it Cecilia, so that's --

Q. If I say "the Cecilia study," you understand what I'm talking about.

A. I do.

Q. Okay, good. Okay. And the Cecilia study tracks all patients who had undergone gender affirming surgery over a 30-year interval and compared those to 6,480 matched controls, correct?

A. Again, if you have -- if you can put it up. I don't remember it by memory.

Q. I'm not sure that I can find it. Well, while I look for that, under what circumstances did you review the Cecilia

study?
A. I mean, I've read it many, many times, whether for conferences, presentations, training, education, previous legal work. So I've read it a number of times. I can't tell you how many or --
Q. And what have you been able to take away from that study to use as a physician?
A. So if you have it, I'd appreciate it if you could --
Q. And I can find it now, so --
A. Okay.
MS. HUPPERT: And we would just make the same request about marking.
MR. DAVID: Sure. We will make the Cecilia study be Exhibit 3.
SCHECHTER DEPOSITION EXHIBIT NO. 3
(Article entitled "Long-Term Follow-Up of Transsexual Persons Undergoing Sex Reassignment Surgery: Cohort Study in Sweden" by Cecilia Dhejne and others was marked for identification purposes as Schechter Deposition Exhibit No. 3.)
Q. You're now looking at what has been marked

as Exhibit 3. Is that the Cecilia that you were referring to?
A. I believe this is the same one we're both referencing, yes.
Q. Okay, good. Okay. And where do you need me to scroll to?
A. If you can just scroll down a bit. Yeah, let me just refresh on it.
Q. Sure.
A. Okay. And if you can scroll down again. I'm sorry, yeah, keep going to next page. Okay, next. Next page.
Okay, we can keep going. Oh, wait, I'm sorry. Go -- I apologize. Can you go back up one?
Q. Sure.
A. I'm sorry. Can you keep going?
Q. Keep going up?
A. I'm sorry, down. Next page, yeah.
Q. And we can keep going. Okay, let's keep going. Okay, let's see.
And yeah, if you can put the top of the -- the head of that table -- right. That's right. As I remember, they divided into two by

time, 1973 to 1988, and then 1989 to 2003. And there were distinctions between those early groups, groups that underwent surgery prior to, for example, the development of Standards of Care in '79 and then subsequent to that in 1989 and 2003.
Q. Okay. Are you -- are your concerns with this study that they may have selected the wrong patients for surgery or that the surgical techniques were not appropriate or something else?
MS. HUPPERT: Object to form.
A. Well, I think several concerns. Surgical techniques have arguably improved over the years. Indications and appreciations for selection of individuals undergoing surgery has improved. Again, general guidelines as for not only pre-op care, but post-operative care, have improved.
And I think the difference between the two time periods reflects that. Not -- probably reflects that.
Q. So is there any utility that you've gained from this study?
A. I'm sorry, that first word --
Q. Is there any utility that you've gained from this study?

A. I think that it's important to -- that the multi-disciplinary nature of the care is important within the realm of gender affirming care.
I think the fact that individuals may need ongoing support, help, treatment, access to mental health services, behavioral health services, medical services, is also important, and I think what is positive and interesting about the study is the reduction, for example, in the suicide attempts between the two groups, that 1973 to '88 as compared to '89 to 2003.
Q. And what do you attribute the reduction in suicide attempts to in the -- those two time frames?
A. Again, our indication, as we've discussed -- for surgery is gender dysphoria, so the fact that there may be other benefits - perhaps reduced suicidality - may be a result of multiple factors: Refinements in selecting individuals for care; recognizing the importance of multi-disciplinary care; and recognizing what, for some people, may be the need for ongoing support by whatever -- you know, whatever that means, whether it's mental health, medical, behavioral health.

Q. The rate of suicide attempts in the control group was lower than that in the group that underwent surgery, correct?

MS. HUPPERT: Object to form.

A. Yes, although I don't believe it reached statistical significance in the '89 to '03 group.

Q. Okay. How does your informed consent process work for adolescents?

A. So as we said, most of the adolescents would be individuals -- the majority of individuals seeking mastectomy. So again, most individuals are referred either from their pediatrician, their adolescent physician, their mental health professional.

We'd meet with the patient, the person as well as their family caregiver, guardian, whatever the particular circumstances may be.

We'll have a discussion much like we talked about for vaginoplasty, but applied more specifically to mastectomy.

I'll speak with the individual, typically both with their parents or guardians or caregivers in the room and also independent, should there be anything they want to tell in confidence.

We will then encourage the patient and their family to go home, consider the information, read over the information and to contact me with questions or concerns.

And in what may be a parallel process, we may be obtaining the various assessments for those individuals. Until that information is obtained and reviewed, we would not schedule surgery.

Q. Do you require parental consent for adolescents to undergo gender affirming surgery?

A. It would require, I guess, consent of the guardian -- whoever would have -- would be the guardian. So it may have been -- you know, I can't remember every case, if there was a custodial parent or a guardian, but typically, it would be a parent/guardian or -- who would, in addition to the individual, consent.

Q. In terms of the surgeries that you have performed - let's say for a transgender plan - have you experienced patients who have requested either top surgery or bottom surgery but not both?

MS. HUPPERT: Object to form.

A. I have had -- cared for individuals,

transgender men, who have -- I can't say that someone who's undergone genital surgery has not had previous top surgery or we're not speaking and laying out a plan over the course of time.

So I would have to say I can't recall an individual transgender man who sought bottom surgery who has not had top surgery.

Q. Okay. And do you recall specific patients that have had top surgery -- transgender men who have had top surgery but not bottom surgery?

A. Yes.

Q. And in those cases, do those patients intend to later get bottom surgery?

MS. HUPPERT: Object to form.

A. Again, it would depend on the individual patient. And I'm using, you know, "bottom surgery" with the catcher-wide net, so some patients may have had, for example, hysterectomy and oophorectomy but not phalloplasty or metoidoplasty so some of those -- none of those procedures.

And the decision whether or not to proceed, again, would depend on the individual person.

Q. If a person undergoes a -- a transgender

man undergoes a top surgery but does not desire a bottom surgery, can -- are you still able to put that patient in congruence with their sex and their gender identity?

MS. HUPPERT: Object to form.

A. So as to any -- how any one patient proceeds with medical and surgical intervention depends upon the specific cases, the situation of the patient. As we talked, in many areas of plastic surgery - most areas of medicine - there are a range of treatment options that are available to people.

Some may choose no surgical intervention; some may choose every surgical intervention that's possible; some people may choose something in the middle.

So again, it would depend upon the specific situation at hand.

Q. And for any transgender patient that you've had that's seeking a gender affirming surgery, how do you determine whether it is medically necessary for that individual patient to undergo surgery?

A. And I'm sorry, you said gender -- with gender dysphoria or with gender incongruence? I

didn't hear the --

Q. Let's start with gender incongruence. How do you determine whether it's medically necessary for that patient to undergo surgery?

A. So, you know, as we've said, it's most often the indication is gender dysphoria. Is it possible that I've operated on individuals who experience gender incongruence who don't have gender dysphoria? Is it possible -- whether or not those procedures receive third-party coverage, I can't recall specifically.

But far and away, with the diagnosis of gender dysphoria, that would help determine the basis of medical necessity.

Q. Are you saying that gender incongruence without gender dysphoria is not an appropriate indication for gender affirming surgery?

MS. HUPPERT: Object to form.

A. No, I'm not saying that. It may have a basis as to whether a particular insurance company may ultimately reimburse for a procedure. My clinical experience, I have to say, gender dysphoria is the typical diagnosis, so I would have to say it would be unusual for someone not to be

experiencing or diagnosed with the medical condition of gender dysphoria that then undergoes surgery.

That would probably be a far less common -- is a far less common situation, and I can't recall off the top of my head a specific circumstance.

Q. And regardless of the frequency of the situation, my question is: If someone has gender incongruence in the absence of gender dysphoria, is that an appropriate indication for gender affirming surgery?

MS. HUPPERT: Object to form.

A. Again, I'd have to know more about the specific clinical situation.

Q. What more would you need to know?

A. Well, as with any individual, I'd have to have a history, physical exam, review their assessments, the basis for their request for surgery, again review their goals, their expectations, perhaps a discussion with either a primary care physician and/or a mental health professional.

Q. Okay. If a patient has gender incongruence

but does not experience distress as a result of it, is that patient an appropriate candidate for gender affirming surgery?

MS. HUPPERT: Object to form.

A. By "distress," are you referring to the diagnosis of the medical condition gender dysphoria?

Q. I'm talking about someone whose gender incongruence -- which -- I'll start here. Under the ICD-11 codes, gender incongruence is now a separate diagnostic code, correct?

A. Yes.

Q. And that's something that's going to be recognized by WPATH in the eighth version of the Standards of Care, correct?

A. Presumably, yes. Although the Standards of Care specifically relate -- while a global document, recognize the need for, you know, additional diagnoses in order to access medical care in certain countries.

Q. True. So the -- at least a draft of the eighth version of the Standards of Care which is obviously not supposed to be for broad dissemination, of course, was broadly disseminated,

right?

A. Yeah. I don't -- I don't agree that it's not for broad dissemination. I think the more -- you know, the more input and more feedback we receive is a good thing.

Q. Sure. And I'm not -- I'm not suggesting that it was -- that you were trying to -- that WPATH was trying to hide it. There's just something on the bottom of it that says that this is not for -- I think it says "Not for Distribution" or something along those lines.

But the draft is out there and accessible to people on the Internet, correct?

A. Well, it was expressly for public comment, so I'm not sure what the disclaimer -- you know, it was designed for public comment, yeah. The fact the public is commenting on it, I think is the intention.

Q. Okay. And let me pull this up and figure out where I was going to ask you a question about, because it's --

MS. HUPPERT: Caleb, if you'd like -- we've been going almost two hours at this point, and so could we --

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MR. DAVID: That's a good idea. I will figure out where I am, but I can promise you we're almost done, Doctor.

THE DEPONENT: All right, wonderful.

(A recess was taken after which the proceedings continued as follows:)

SCHECHTER DEPOSITION EXHIBIT NOS. 4 - 7

(Article entitled "Evidence-Based Patient Safety Advisory: Blood Dyscrasias" by Haeck and others, the WPATH DRAFT Version on the Standards of Care Version 8, the initial Schechter report, rebuttal Schecter report were marked for identification purposes as Schechter Deposition Exhibit Nos. 4, 5, 6 and 7.)

BY MR. DAVID:

Q. Doctor, we are back on the record, and I was about to show you the WPATH Standards of Care eighth version draft that was draft -- and just so that we're all on the same page here, here is the WPATH property confidential draft for public comment, not for distribution.

So that's what I was referring to

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earlier. But there are no page numbers on this particular document, and let me screen share so everyone is seeing what I'm seeing. There are no page numbers on this particular document, but it is page 72 of 359 that I'm specifically referring to.

And Doctor, in this particular section of the draft Standards of Care, it's talking about the two diagnostic terms that we discussed already, gender incongruence and gender dysphoria, right?

A. Okay. I can look.

Okay.

Q. All right. And in this paragraph that we're focused on, I'll highlight a sentence. It says, "One important reconceptualization in comparison to the DSM-V Gender Dysphoria classification is that distress is not a required indicator of the ICD-11 Gender Incongruence classification," and it's citing the World Health Organization, 2019.

First, did I read that correctly?

A. It is read correct.

Q. Okay. Is that consistent with your understanding of the differences between gender incongruence and gender dysphoria?

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A. So let me again say that I don't make that diagnosis of gender dysphoria, so that's one. And that two, to note, this is a draft -- a draft document. So this may not represent the final -- obviously the final report.

Q. Sure. And noting that and understanding that, is that - this sentence that I have highlighted on Exhibit 5 - consistent with your understanding of the differences of those diagnostic classifications?

A. Again, I don't make those diagnoses, so I don't want to -- that would be outside my typical clinical area of expertise.

Q. Okay. You treat these diagnoses, correct?

MS. HUPPERT: Object to form.

A. I treat gender dysphoria, correct.

Q. Okay. Do you treat gender incongruence?

A. Yes.

Q. Okay. And do you treat gender incongruence surgically?

A. As I said previously, one must be transgender - meaning to have gender incongruence - to experience gender dysphoria. So my indications for surgery are gender dysphoria.

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Q. All right. So I'm going to scroll down here, and I think you'll be able to see both of these paragraphs, and I wanted to specifically ask you about -- and I'll scroll up some more. I think the is consistent with your testimony. It says that -- at least part of it.

First I'll read it. "As noted before, not all transgender and gender diverse people experience gender dysphoria and this should not preclude them from accessing medical affirming care."

First, did I read that correctly?

A. Can I -- can you scroll -- I'd like to see what chapter this is contained in?

Q. Oh, sure.

A. Yeah.

Q. Let me see if I can find that. Under Statement 12A.

A. No, keep -- right. It will give a chapter head.

Oh, okay, this is in the Adolescent chapter, which is still undergoing revision.

Q. Okay. Okay, back to this section, I'll read the highlighted part again. "As noted before,

not all transgender and gender diverse people experience gender dysphoria and this should not preclude them from accessing medical affirming care."

Did I read that correctly?

A. You did read that correctly.

Q. Do you personally agree with that statement?

MS. HUPPERT: Object to form.

A. So again, this is from a draft document, and this specific chapter, the Adolescent chapter, is still undergoing revision and discussion. So I can't provide a final comment until the final document is released.

Q. Okay. So you can't tell me whether you agree with that statement?

MS. HUPPERT: Object to form.

A. So I am under, again, a nondisclosure pertaining -- until the release of the document, so I don't want to comment until -- as to the specifics of the document until it's finally released.

Q. All right. So you can't tell me whether or not people who do not experience gender dysphoria

can appropriately undergo surgical therapy.

MS. HUPPERT: Object to form.

A. So as I said, my indication for surgery is gender dysphoria. How diagnoses or treatments may evolve in the future, I can't necessarily predict.

Q. Okay. Sitting where you are today, do you believe that it is medically necessary to perform surgery on a patient with medical -- with gender incongruence without gender dysphoria?

MS. HUPPERT: Object to form.

A. I'm sorry, that was a -- can you just read that back a minute?

Q. Sure. Sitting where you are today, if a patient presents to you with gender incongruence without gender dysphoria, is it medically necessary to perform a gender affirming surgery on that person?

MS. HUPPERT: Object to form.

A. So I would have to know the -- more specifics of the case. Where I -- sitting here today, the typical indication is gender dysphoria. If an individual who is requesting surgical services does not experience gender dysphoria, I would have to speak with additional people -

whether primary care professionals, mental health professionals - to understand more about the request.

Q. All right. That's all I have for this one. Let me stop --

Okay. A couple of things that I want to go back to, and then we'll be done. I promise, we're getting very, very close now. You mentioned earlier that you had one patient who I believe you said you had performed a mastectomy on, and that patient came back years later and informed you that that patient regretted their decision -- or I might be forgetting the procedure.

But do you remember what -- do you know what I'm talking about?

MS. HUPPERT: Object to form.

A. So it was a -- an individual had breast augmentation, but did not express regret; rather -- or requested removal of the implant.

Q. Okay. So was that a patient who was a transgender woman who received a breast augmentation?

A. That is correct.

Q. Okay. And then following a period of

years, it sounded like - but you can narrow it if you need to, but a period of years - the patient returned to you and requested a removal of the implants.

MS. HUPPERT: Object to form.

A. That is correct.

Q. Okay. Did you talk to the patient about the reasons for the removal?

A. Yes.

Q. Okay. And what do you recall the patient telling you was the reason for the removal?

A. As I recall, they were -- it was a -- she was a transgender woman at the time of the augmentation. I believe it was eight or ten years later, was seen requesting removal of the implants.

And as I recall, she indicated that she was returning to her male identification, so the sex she had -- was assigned at birth being male.

Q. And have you experienced any other patients going through that similar process of transition and then requesting a reversal of the transitional gender affirming surgery?

MS. HUPPERT: Object to form.

A. I believe that is the only person that I have seen in consul -- that I have seen in consultation for that.

Q. Outside of the pilot study and your ongoing study, do you do patient satisfaction surveys for all of your patients?

A. The hospital might. I'm not -- I'm not sure. It's done as part of the study, so I think it's captured within the context of the study.

Q. What percentage of your patients continue to have after-care with you after one year following surgery?

MS. HUPPERT: Object to form.

A. I would estimate perhaps 20 percent, perhaps 25 percent.

Q. So are the 70 to -- or 75 to 80 percent of patients who do not continue to receive after-care, are those patients that it's no longer necessary for them to be receiving after-care, or they're lost to follow up?

MS. HUPPERT: Objection to form.

A. I wouldn't describe it as "lost to follow-up," because although someone may not see me, we always leave the door open to contact the

office.

Q. Okay. So are you able to accurately testify about the outcomes for your specific patients past a year?

A. Yes. Because that's consistent with many other areas of plastic surgery. Individuals would typically return - depending on the specific case - on an as-needed basis after that time.

So breast reconstrution patients -- sorry, breast augmentation patients, we may see them at five or ten year follow-up to do implant surveys. Not all patients follow up. Other individuals would contact us on an as-needed basis.

Q. And how likely is it that a patient who is dissatisfied with your services will follow up with you?

MS. HUPPERT: Object to form.

A. I would anticipate we would hear about it.

Q. And how would you hear about it?

MS. HUPPERT: Object to form.

A. They would typically contact the office.

Q. And so a year after surgery, are you able to identify or locate 100 percent of your patients?

A. As with any medical practice, I'm not sure

I could locate 100 percent of our patients. We do, of course, have their contact information and emergency contact information.

Q. And are you following up with them at that point to ask them whether they are still satisfied with the services that you provided?

A. Well, I know that we've recently - because of my practice transition - just sent a letter to our last two or three years of patients, notifying them of the -- of my change in practice location. So --

Q. And did that notification provide them with a survey to fill out to tell you what their satisfaction level was at that time?

A. No. It asked them to -- or apprised them of my new contact information.

Q. Are you familiar with the body of literature regarding detransitioning?

MS. HUPPERT: Object to form.

A. I am familiar with the term "detransition." I'm not sure exactly what you mean by "the body of literature," if you can be more specific.

Q. Sure. I believe that the author of the study, the most recent one that I've seen, is

Littman, did a study of 100 individuals who detransitioned. Are you familiar with that?

MS. HUPPERT: Object to form. Object to scope.

A. I don't believe I've seen the recent article by Littman. If you have it, I can take a look.

Q. Sure. Okay. Can you see what is on my screen?

A. Yes.

Q. Okay. And this is titled "Individuals Treated For Gender Dysphoria With Medical and/or Surgical Transition Who Subsequently Detransitioned: A Survey of 100 Detransitioners." Are you familiar with this study?

A. I have not seen that.

Q. Okay. Then I will stop sharing.

MS. HUPPERT: Counsel, I would just -- I would ask that you mark that as an exhibit also. And just a question: Is that the version of the article with the correction appended?

MR. DAVID: I don't know.

MS. HUPPERT: We'd just like to note from the record - at least from what I can tell -

that it appeared to be the version that did not have the correction appended.

MR. DAVID: And I will note for the record that I didn't ask any questions about it. But I don't know that I have another version of this.

MS. HUPPERT: Okay.

MR. DAVID: I have no problem with making this an exhibit, but I didn't ask any questions about that. So we can do that if you'd like.

SCHECHTER DEPOSITION EXHIBIT NO. 7
(Article entitled "Individuals Treated for Gender Dysphoria with Medical and/or Surgical Transition Who Subsequently Detransitioned: A Survey of 100 Detransitioners" was marked for identification purposes as Schechter Deposition Exhibit No. 8.)

Q. Are you aware of any other medical literature regarding detransition, Doctor?

MS. HUPPERT: Object to form. Object to scope.

A. I am aware of literature that discusses

individuals who have undergone gender affirming interventions and who subsequently request surgical reversal of their procedures.

Q. And have you performed -- other than the one patient that we've talked about, have you performed any surgical reversals of gender affirming surgeries?

MS. HUPPERT: Object to form.

A. I have not.

Q. Are you aware of whether or not Christopher Fain has requested prior authorization for gender affirming surgery?

A. I am not aware. I did read the Complaint and Amended Complaint, but I don't recall whether or not there was a request for prior authorization.

Q. Are you aware of any treating medical provider of Christopher Fain who has recommended gender affirming surgery?

MS. HUPPERT: Object to form.

A. I have not -- neither seen nor spoken with -- or seen any -- seen his medical records or spoken with anyone involved in the clinical care.

Q. And same questions for Shauntae Anderson: Have you seen or are you aware of whether or not

Shauntae Anderson has requested prior authorization for gender affirming surgery?

MS. HUPPERT: Object to form.

Sorry. Object to form.

A. Same answer as previous: I read the Complaints, but I don't recall whether there was a specific request for prior authorization.

Q. And are you aware of any treating medical provider who has recommended gender affirming surgery for Shauntae Anderson?

MS. HUPPERT: Object to form.

A. I have seen no medical records, nor have I spoken with anyone involved in clinical care.

Q. And I think that I poorly asked this earlier. In the case of an individual who desires top surgery but not bottom surgery, without both surgeries, are you able to bring someone's gender identity into congruence with their sexual characteristics?

MS. HUPPERT: Object to form.

A. Well, the purpose of the -- of surgery as a treatment for gender dysphoria is to align one's identity with their body. The decision to undergo a particular medical or surgical intervention is

based on the specific circumstances, the individual -- and a discussion that I have with the patient, a risk/benefit analysis on the part of an individual.

So whether or not one particular individual chooses to undergo a particular treatment option, as with the range of other interventions in plastic surgery for other conditions, really depends upon the specifics of the case, that person's risk/benefit analysis and, as we've said before, not all individuals will elect to undergo all potential surgical options that are available.

Q. Have you had patients who are transgender men who have undergone double mastectomy but have not undergone a -- why am I -- I'm blanking. Transgender men who have undergone a double mastectomy but not a phalloplasty?

Are -- have you had patients who have done that?

MS. HUPPERT: Object to form.

A. I've had patients who are transgender men who have undergone top surgery, meaning mastectomy, but not a phalloplasty.

Q. And have those patients reported to you

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that they felt congruent with their gender identity?

A. Again, that depends on the individual specifics. So what individuals may express, that in an ideal situation, they would undergo phalloplasty, but for a myriad of reasons - as people do in making medical decisions in other areas - they may or may not opt for a particular intervention.

Q. And so if I'm understanding you correctly, I think you said for almost all medical procedures - maybe you said for all - it's dependent upon the patient's history, physical examination, lab work that you obtained, imaging that you obtained, and also patient goals, expectations, wants and desires. Correct?

A. And their understanding of the risks, the benefits, the alternatives. And depending on the person, it may include other people who are relevant in their decision-making process: Spouse, partner, parent, child.

Q. And those determinations and those findings are all individualized, correct?

A. That is correct.

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Q. Okay. I wanted to ask you a couple questions about some of the literature that you cited in your rebuttal report. Specifically, you cite to an article titled "What does the scholarly research say about the effect of gender transition on transgender well-being? What We Know," and you state that that is from the Center For Study of Inequality at Cornell University.

Are you familiar with that?

A. I am, but if you put it up, I can speak more specifically to it.

Q. Okay. I'll see if I can find that real quick. Okay. Let me share this thing. All right. Can you see what's on my screen now?

A. I can.

Q. Okay. And do you recognize this as one of the articles that you cited to in your rebuttal report?

A. Can you just go up to the top?

Q. Sure.

A. I don't know if this is the web study or the article.

Q. Your citation which is Footnote 16 of your report specifically has this website as the

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citation.

A. And can you read that to me? That citation in my report?

Q. "What does the scholarly research say about the effect of gender transition on transgender well-being?" "What We Know," 2021, https:// --

A. Okay, I've got it.

Q. So do you recognize this article?

A. Well, I recognize this -- that's what I was saying. I think it's a web -- a web page.

Q. Okay. Who wrote this?

MS. HUPPERT: Object to form.

A. Can you scroll down?

Q. Sure.

A. Yeah. Okay. Well, the cite refers to articles written by the various authors here. If you can scroll back up, I think there were eight -- yeah, I believe they reference the eight findings of the review.

And if you can go to Home.

So it appears to be the Center for the Study of Inequality at Cornell University.

Q. So do you know -- and I'll go back to the page. Do you know who the researchers were on

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this?

MS. HUPPERT: Object to form.

A. I -- again, I -- this page refers to other articles. I don't know who wrote the web page.

Q. Okay. Is this web page peer-reviewed?

MS. HUPPERT: Object to form.

A. Can you scroll -- actually, I'm sorry. Can you go back to Home? Okay. Let me see. So this is a -- and you can go back to the other page.

Yeah, this is basically a web page that directs to peer-reviewed literature.

A. Okay.

MS. HUPPERT: The same question, if you don't mind marking just that -- a printout of that web page that had the --

MR. DAVID: I'll see if I can make that happen. I don't see any reason I can't.

SCHECHTER DEPOSITION EXHIBIT NO. 9

(Cornell University web page entitled "What does the scholarly research say about the effect of gender transition on transgender well-being" was marked for identification purposes as Schechter Deposition Exhibit No. 9.)

MS. HUPPERT: Appreciate it.

Q. There is an article that was written by Doctor Karasic that was titled "Age is Just a Number," and it was a -- I guess a review process where they spoke with WPATH surgeons about care that they provided. Did you participate in that?

MS. HUPPERT: Object to form.

A. Do you have -- can you show me the citation?

Q. I should be able to. Okay. So can you see this up on the screen?

A. I can, yes.

Q. Okay. And I just want to know if you participated in this survey.

A. I believe I did.

Q. Okay. Do you remember -- if we went through this, would you be able to say, "This is me talking"?

A. I think this was a while -- can you -- if you scroll down. This was a while ago. Yeah, so it was published in '17, so, you know, submitted certainly before that, so I'm -- I'm not sure that I could identify my comments or whether any of my comments are even included.

Q. All of the surgeons were anonymous, so I didn't know if -- I assumed that would be your answer, but --

Okay. Then I'm not going to ask you any questions about this.

MR. DAVID: And I think that those are all the questions I have for you, Doctor. Thank you.

THE DEPONENT: Thank you.

MS. HUPPERT: We do not have any questions for the witness, but we would like to review and sign.

(Having indicated he would like to read his deposition before filing, further this deponent saith not.)

--oOo--

STATE OF WEST VIRGINIA,
COUNTY OF JACKSON, to wit;

I, Teresa S. Evans, a Notary Public within and for the County and State aforesaid, duly commissioned and qualified, do hereby certify that the foregoing deposition of DR. LOREN SCHECHTER was duly taken by me and before me at the time and place and for the purpose specified in the caption hereof, the said witness having been by me first duly sworn.

I do further certify that the said deposition was correctly taken by me in shorthand notes, and that the same were accurately written out in full and reduced to typewriting and that the witness did request to read his transcript.

I further certify that I am neither attorney or counsel for, nor related to or employed by, any of the parties to the action in which this deposition is taken, and further that I am not a relative or employee of any attorney or counsel employed by the parties or financially interested in the action and that the attached transcript meets the requirements set forth within article twenty-seven, chapter forty-seven of the West Virginia Code.

My commission expires October 15, 2030.

Given under my hand this 31st day of March, 2021.

Teresa S. Evans
RMR, CRR, RPR, WV-CCR

ERRATA SHEET

I, DR. LOREN SCHECHTER, do hereby certify that the foregoing is a true and correct transcript of my deposition with the exception of the following corrections:

PAGE	LINE	CORRECTION

DEPONENT'S SIGNATURE

STATE OF _____,
COUNTY OF _____,

Sworn to before me, _____, Notary Public, this ____ day of _____, 2021.

NOTARY PUBLIC

ERRATA SHEET

I, DR. LOREN SCHECHTER, do hereby certify that the foregoing is a true and correct transcript of my deposition with the exception of the following corrections:

PAGE	LINE	CORRECTION
44	10	Change "a case" to "adjacent to"
78	9	Change "what I've always" to "what's been"
118	20	Change "sought" to "selected"
121	21	Change "dysmorphyic" to "dysmorphic"
122	1, 5, 8, 12, 13, 16, 19	Change "dysmorphyic" to "dysmorphic"
123	1, 9, 23	Change "dysmorphyic" to "dysmorphic"
124	3	Change "dysmorphyic" to "dysmorphic"
128	18	Change "corporeal" to "corporal"
132	9	Change "wow" to "well"
132	13	Change "cisgendered" to "cisgender"
206	9	Change "reconstrution" to "reconstruction"

loren schechter

DEPONENT'S SIGNATURE

STATE OF VIRGINIA,
COUNTY OF FAIRFAX,

Sworn to before me,
VY NGOC THANH NGUYEN, Notary Public, this
14 day of APRIL, 2021.

SEAL

NOTARY PUBLIC

Reduction in Mental Health Treatment Utilization Among Transgender Individuals After Gender-Affirming Surgeries: A Total Population Study

Richard Bränström, Ph.D., John E. Pachankis, Ph.D.

Objective: Despite professional recommendations to consider gender-affirming hormone and surgical interventions for transgender individuals experiencing gender incongruence, the long-term effect of such interventions on mental health is largely unknown. The aim of this study was to ascertain the prevalence of mood and anxiety disorder health care visits and antidepressant and anxiolytic prescriptions in 2015 as a function of gender incongruence diagnosis and gender-affirming hormone and surgical treatment in the entire Swedish population.

Methods: This study used the Swedish Total Population Register (N=9,747,324), linked to the National Patient Register and the Prescribed Drug Register. Among individuals who received a diagnosis of gender incongruence (i.e., transsexualism or gender identity disorder) between 2005 and 2015 (N=2,679), mental health treatment in 2015 was examined as a function of length of time since gender-affirming hormone and surgical treatment. Outcome measures were mood and anxiety disorder health care visits, antidepressant and anxiolytic prescriptions, and hospitalization after a suicide attempt.

Results: Compared with the general population, individuals with a gender incongruence diagnosis were about six times as likely to have had a mood and anxiety disorder health care visit, more than three times as likely to have received prescriptions for antidepressants and anxiolytics, and more than six times as likely to have been hospitalized after a suicide attempt. Years since initiating hormone treatment was not significantly related to likelihood of mental health treatment (adjusted odds ratio=1.01, 95% CI=0.98, 1.03). However, increased time since last gender-affirming surgery was associated with reduced mental health treatment (adjusted odds ratio=0.92, 95% CI=0.87, 0.98).

Conclusions: In this first total population study of transgender individuals with a gender incongruence diagnosis, the longitudinal association between gender-affirming surgery and reduced likelihood of mental health treatment lends support to the decision to provide gender-affirming surgeries to transgender individuals who seek them.

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Numerous studies indicate that transgender individuals—that is, individuals who experience incongruity between their sex assigned at birth and their current gender identity—are at particular risk of psychological distress and associated impairment (e.g., suicidality) (1–3). This elevated risk is hypothesized to stem at least in part from transgender individuals' elevated exposure to stigma-related stress, also known as minority stress (4, 5), and it can also result from the stress associated with a lack of gender affirmation (i.e., the accurate recognition and validation of one's gender identity) (6). ICD-11 (7) specifies that individuals experiencing persistent discordance between their experienced gender and their assigned sex meet diagnostic criteria for gender incongruence.

To alleviate the stress of persistent discordance between experienced gender and assigned sex, an increasing number of transgender individuals who experience gender incongruence seek gender-affirming medical interventions, including hormone replacement therapy and gender-affirming surgeries (8). The World Professional Association for Transgender Health's *Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People* recommends consideration of these interventions for affirming transgender individuals' gender and alleviating gender-related stress (9).

Despite professional recommendations to consider gender-affirming medical interventions for transgender individuals who experience gender incongruence, the effect of such interventions on long-term mental health is largely unknown. Available evidence stems mainly from small samples utilizing cross-sectional designs and self-reported treatment exposures and mental health outcomes (2, 10, 11). A meta-analysis

See related feature: **Editorial** *by Dr. Mueller (p. 657)*

that aggregated data across nearly two dozen small-sample studies (10), mostly relying on cross-sectional designs, found positive associations between self-reports of receiving both hormone therapy and gender-affirming surgery and mental health. Several more recent uncontrolled studies of the effects of hormone replacement therapy on transgender individuals' mental health have found that transgender individuals' mental health improved for up to 24 months after initiating hormone therapy (11, 12).

Because of previous studies' limitations, including short assessment periods and the fact that existing probability-based surveys do not routinely assess transgender status or other aspects of gender diversity, insufficient evidence exists regarding associations between length of time since receiving gender-affirming interventions and treatment for psychiatric disorders among the transgender population. In fact, no probability-based evidence exists regarding even the prevalence of mood and anxiety disorder treatment among transgender individuals compared with the general population (1).

The limitations of previous research in terms of nonrepresentative sampling, self-reported measurement, and limited follow-up periods can be overcome with national health registry data sets that include clinician-derived assessment of gender incongruence and complete records of psychiatric and gender-affirming treatment and utilization data in an entire population. In the one known study to use a population-based design to investigate psychiatric morbidity among transgender individuals (N=324), individuals who had legally changed their gender and had a diagnosis of gender incongruence associated with an inpatient hospital visit in Sweden between 1973 and 2003 were at higher risk of suicide attempts, suicide-related mortality, and psychiatric hospitalization compared with age- and reassigned-gender-matched controls (13). The study did not report the prevalence of mood and anxiety disorder treatment among those receiving gender-affirming treatment compared with the total population or as a function of length of time since receiving gender-affirming treatment. Furthermore, the proportion of individuals receiving gender-affirming treatments in Sweden has increased nearly exponentially since 2003 (8, 14). Similar recent increases in referrals for gender-affirming treatments have been reported in other countries around the world (15–18).

In this study, we took advantage of the Swedish Total Population Register (19), linked to the Swedish National Patient Register and the Swedish Prescribed Drug Register, to ascertain the prevalence of mood and anxiety disorder health care visits, antidepressant and anxiolytic prescriptions, and hospitalization after a suicide attempt among the entire Swedish population as a function of gender incongruence diagnosis, gender-affirming hormone and surgery utilization, and length of time since receiving gender-affirming treatments. This data set permitted identification of all individuals in Sweden seeking gender-affirming treatments between January 1, 2005, and December 31, 2015. Although not all transgender individuals seek gender-affirming treatments and not all treatment-seeking transgender individuals meet diagnostic criteria for gender incongruence, findings from this unique data opportunity have timely implications for documenting the mental health of transgender individuals seeking gender-affirmative treatment and ways in which the medical profession can support this increasingly visible population.

METHODS

This total population prospective study included all individuals living in Sweden on December 31, 2014, as identified in the Swedish Total Population Register. Using de-identified personal identification numbers (a unique number assigned to all Swedish residents), we linked sociodemographic information with National Patient Register information on health care usage between January 1, 2005, and December 31, 2015, and Prescribed Drug Register information on prescribed and purchased medication between July 1, 2005, and December 31, 2015. The study was approved by the Regional Ethics Committee in Stockholm (no. 2017/1736–31).

Gender Incongruence Diagnosis

Using the Swedish National Patient Register, we classified all individuals in Sweden according to whether they had received a diagnosis of gender incongruence, as defined by the diagnostic system applied in Sweden during the study period (i.e., a diagnosis of either transsexualism [ICD-10 code F64.0] or gender identity disorder [ICD-10 codes F64.8, F64.9]) during an inpatient or specialized outpatient visit between January 1, 2005, and December 31, 2015. The two diagnoses used to define gender incongruence at the time of the study are not fully equivalent but capture largely overlapping populations (20). In Sweden during the study period, a diagnosis of either transsexualism or gender identity disorder was required for accessing gender-affirming treatment (e.g., gender-affirming hormone treatment, hormone-suppressing or -blocking medication treatment, mastectomy with chest contouring, hair removal, vocal cord surgery, speech therapy, genital surgery) and was given after an approximately yearlong evaluation, following a national consensus program (14, 21). Adolescents could receive the same gender-affirming treatments as adults but could not receive genital surgery before age 18 (22).

Outcome Measures

This study's outcome measures were psychiatric outpatient health care visits, antidepressant and anxiolytic prescriptions, and hospitalization after a suicide attempt between January 1, 2015, and December 31, 2015. Restricting the outcome assessment period to one year, 2015, the most recent available, removes potential confounding by secular trends in treatment utilization and transgender acceptance and visibility. Each psychiatric outpatient visit was coded by the treating physician with a primary diagnosis from ICD-10 (23)

and up to 20 supplementary ICD-10 diagnostic codes. Using these codes, we classified all individuals as having received treatment for any or no mood disorders (codes F30–F39) or anxiety disorders (codes F40–F42). Prescribed medication use was obtained from the Swedish Prescribed Drug Register, which contains information regarding all prescribed and purchased medications nationwide for all individuals. Individuals were categorized into any use or no use of antidepressant and anxiolytic medication according to the Anatomical Therapeutic Chemical (ATC) Classification system (codes N06A and N05B). All inpatient health care visits were similarly coded by the treating physician using ICD-10, indicating a primary cause of hospitalization and up to 30 supplementary causes. Using these codes, we classified all individuals as having been hospitalized after a suicide attempt (versus not) using the ICD-10 codes for intentional self-harm (codes X60–X84).

TABLE 1. Demographic characteristics of the Swedish population, by gender incongruence diagnosis, December 31, 2014

Measure	Individuals Diagnosed With Gender Incongruence (N=2,679)		General Population[a] (N=9,744,645)	
	Mean	SD	Mean	SD
Age (years)	31.5	14.0	40.7	23.8
Mean yearly household income (Swedish kronor, 000s)	298.4	301.0	464.8	800.6
	N	%	N	%
Legal gender				
Male	1,284	47.9	4,870,930	50.0
Female	1,395	52.1	4,873,715	50.0
University education	809	30.2	2,643,505	27.1
Urbanicity				
Larger city	1,102	41.1	3,364,003	34.5
Smaller city	867	32.4	3,238,223	33.2
Rural community	710	26.5	3,142,419	32.2
Country of birth				
Sweden	2,214	82.6	8,141,590	83.5
Other European country	164	6.1	801,227	8.2
Outside of Europe	301	11.2	800,800	8.2
No information about country of birth	0	0.0	1,028	0.01

[a] The N for general population excludes those with a diagnosis of gender incongruence.

Covariates

Sociodemographic information was drawn from the Swedish Total Population Register in December 2014 and included current legal gender, age, country of birth, level of education, urbanicity, and household income.

Gender-Affirming Treatment Utilization

For individuals with a gender incongruence diagnosis at any visit, we assessed the type and year of gender-affirming treatment, both hormone treatment and surgery. Information about hormone treatment, including androgen-suppressing and -blocking medication, was obtained from the Swedish Prescribed Drug Register between July 1, 2005, and December 31, 2015. All medications prescribed to individuals who had received a gender incongruence diagnosis were coded as gender-affirming if they were feminizing hormone medication (i.e., estrogens [ATC codes G03C, L02AA], progestogen [G03D]), masculinizing hormone medication (i.e., androgens [G03B]), or androgen-suppression or -blocking medication (i.e., testosterone-5-alpha reductase inhibitors [G04CB], antiandrogens [G03H], gonadotropin-releasing hormone analogues [G03GA, L02AE, H01CA], antigonadotropin-releasing hormones [H01CC], and spironolactone [C03DA01]). For each individual with a gender incongruence diagnosis who received prescriptions for any of these medications, we calculated the number of years since initiation.

Gender-affirming surgery was coded using information about all inpatient surgical procedures received by individuals with a gender incongruence diagnosis in the National Patient Register between January 1, 2005, and December 31, 2015. All surgical procedures associated with a gender incongruence diagnosis performed during this period were coded by type of surgery using the Nordic Medico-Statistical Committee Classification of Surgical Procedures (16): breast or dermatological chest surgery (codes H and QB), surgery of the reproductive organs (codes K and L), dermatological surgery (code Q), and laryngeal surgery (code DQ).

Statistical Analysis

We first examined sociodemographic differences between individuals with a gender incongruence diagnosis and the rest of the population in Sweden. We then compared the prevalence of any mood and anxiety disorder treatments (i.e., psychiatric outpatient health care visits and prescribed psychiatric medication) between individuals receiving gender-affirming treatments and the rest of the population in Sweden during 2015, using logistic regression. Among individuals with a gender incongruence diagnosis, we then investigated the odds of mood and anxiety disorder treatment and hospitalization following a suicide attempt (occurring in 2015) as a function of years since initiation of hormone or hormone-suppressing treatment and since last gender-affirming surgery. We examined years since *last* gender-affirming surgery because gender-affirming surgery is often a lengthy process involving several distinct procedures before gender affirmation is attained.

All analyses were conducted using SPSS, version 24 (IBM, Armonk, N.Y.), and adjusted for current legal gender, age, country of birth, level of education, urbanicity, and household income.

TABLE 2. Association between gender incongruence diagnosis and mood- and anxiety-related health care visits, antidepressant and anxiolytic prescriptions, and hospitalization after suicide attempt in the total Swedish population, 2015[a]

	Individuals Diagnosed With Gender Incongruence (N=2,679)		General Population[b] (N=9,744,645)		Unadjusted		Adjusted	
Measure	N	%	N	%	Odds Ratio	95% CI	Odds Ratio	95% CI
Psychiatric outpatient visits, 2015								
Any mood disorder	250	9.3	95,137	1.0	10.44	9.16, 11.89	6.07	5.32, 6.93
Any anxiety disorder	197	7.4	63,200	0.6	12.16	10.52, 14.06	5.92	5.10, 6.86
Prescribed medication treatment, 2015								
Any antidepressant use	771	28.8	377,043	9.4	3.90	3.58, 4.24	3.95	3.62, 4.31
Any anxiolytic treatment	449	16.8	566,678	5.8	3.26	2.95, 3.61	3.43	3.09, 3.81
Inpatient visits, 2015								
Hospitalization after suicide attempt	22	0.8	7,104	0.1	11.35	7.46, 17.28	6.79	4.45, 10.35

[a] All analyses were conducted using logistic regression and adjusted for age, gender, education, income, urbanity, and country of birth.
[b] The N for general population excludes those with a diagnosis of gender incongruence.

RESULTS

Of the total Swedish population on December 31, 2014 (N=9,747,324), 2,679 had received a diagnosis of gender incongruence between January 1, 2005, and December 31, 2015 (Table 1). Those diagnosed with gender incongruence were significantly younger on average than the rest of the population ($t=19.94$, $p<0.001$), and they were more likely to have a current legal female gender than male gender ($\chi^2=4.54$, $p=0.03$). Individuals with a gender incongruence diagnosis were more likely to have a university education ($\chi^2=12.77$, $p<0.001$), to have a lower household income ($t=30.61$, $p<0.001$), to live in a larger city ($\chi^2=61.95$, $p<0.001$), and to have been born outside of Europe ($\chi^2=32.33$, $p<0.001$).

Mood and Anxiety Disorder Treatment Among Individuals Diagnosed With Gender Incongruence

Table 2 compares the prevalence of health care visits and medication treatment for mood and anxiety disorders between individuals diagnosed with gender incongruence and those not. In analyses adjusted for sociodemographic factors, those diagnosed with gender incongruence were about six times as likely to have had a health care visit due to a mood or anxiety disorder in 2015, more than three times as likely to have received prescriptions for antidepressant and anxiolytic medication in 2015, and more than six times as likely to have been hospitalized after a suicide attempt.

Gender-Affirming Treatments Among Individuals Diagnosed With Gender Incongruence

Just over 70% of individuals diagnosed with gender incongruence during the follow-up period (2005–2015) had received prescriptions for hormone treatment, including androgen-suppressing and -blocking medication, during this period. Half of those treated with hormones had initiated their hormone treatment within the past 5 years (Table 3).

Nearly 40% of those with a diagnosis of gender incongruence had received gender-affirming surgical treatments during the follow-up period. Table 3 presents the types of surgical treatments and the distribution of individuals by number of years since last gender-affirming surgery. The most common types of surgical procedures were mastectomy with chest contouring, surgery of the reproductive organs, dermatological surgeries, and laryngeal surgery.

Less than a third (29%) of those diagnosed with gender incongruence had received neither hormone treatment nor gender-affirming surgery. Among those who had received gender-affirming surgery, 97% had also been treated with hormones.

Changes in Likelihood of Mood and Anxiety Disorder Treatment After Gender-Affirming Hormone and Surgical Treatment

We examined the effect of years since hormone treatment initiation and years since last gender-affirming surgery on likelihood of having received mood or anxiety disorder treatment in 2015 among individuals with a diagnosis of gender incongruence. Among those with a gender incongruence diagnosis receiving hormone treatment, years since initiation of hormone treatment was not significantly related to likelihood of mental health treatment (i.e., psychiatric outpatient health care visits and prescribed psychiatric medication; adjusted odds ratio=1.01, 95% CI=0.98, 1.03). However, among those receiving gender-affirming surgical treatment, the risk of mental health treatment was significantly reduced with increased time since last surgical treatment (adjusted odds ratio=0.92, 95% CI=0.87, 0.97). Specifically, the likelihood of being treated for a mood or anxiety disorder was reduced by 8% for each year since last gender-affirming surgery. The number of individuals with a gender incongruence diagnosis who had been hospitalized after a suicide attempt in 2015 was low (N=22) but was also

reduced as a function of time since last surgical treatment. The association between time since gender-affirming hormone and surgical treatments and hospitalization after a suicide attempt did not reach significance (hormone treatment: adjusted odds ratio=1.12, 95% CI=0.97, 1.30; surgical treatment: adjusted odds ratio=0.87, 95% CI=0.61, 1.24). Figure 1 presents the prevalence of mental health treatment (either health care visits for depression and anxiety, antidepressant and anxiolytic prescriptions, or both) and hospitalization after a suicide attempt in 2015 by years since last gender-affirming surgical treatment.

To assess the potentially interrelated and therefore confounding effect of gender-affirming hormone and surgical treatments on each other, a sensitivity analyses was conducted, entering both years since initiation of hormone treatment and years since last surgical treatment simultaneously into the same model predicting odds of mood and anxiety disorder treatment (i.e., psychiatric outpatient health care visits and prescribed psychiatric medication). The results of this analysis were similar to those presented above, with a nonsignificant effect of time since initiation of hormone treatment (adjusted odds ratio=1.03, 95% CI=0.97, 1.08) and a significant effect of years since last gender-affirming surgical treatment (adjusted odds ratio=0.91, 95% CI=0.86, 0.97).

TABLE 3. Type of, and years since, gender-affirming hormone and surgery treatment in December 31, 2015, among individuals with a gender incongruence diagnosis in Sweden, January 1, 2005, to December 31, 2015

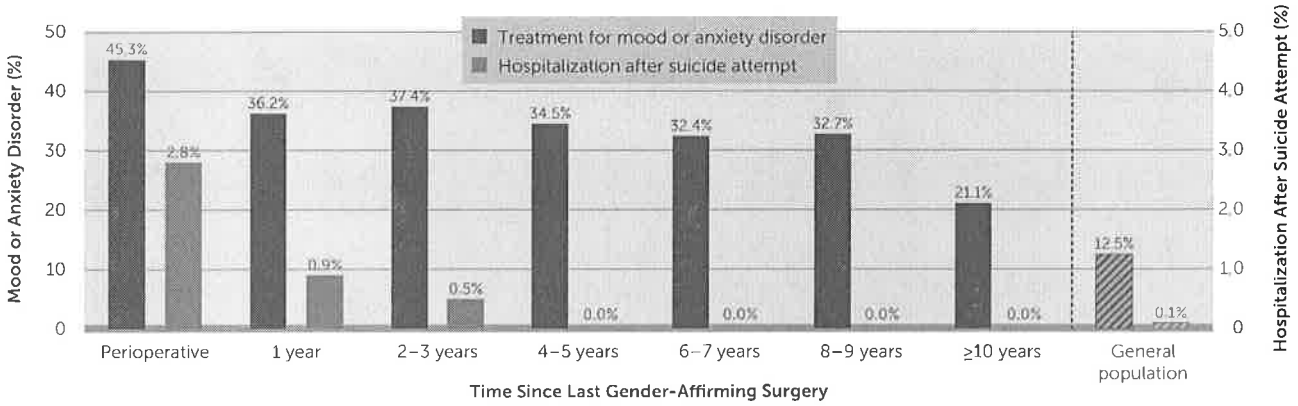
Measure	N	%
Time since first gender-affirming hormone treatment	Individuals with gender incongruence diagnosis (N=2,679)	
No hormone treatment	794	29.6
<1 year	359	13.4
1 year	226	8.4
2–3 years	367	13.7
4–5 years	330	12.3
6–7 years	176	6.6
8–9 years	193	7.2
≥10 years	234	8.7
Type of hormone treatment (more than one type is possible)	All individuals receiving gender-affirming hormone treatment (N=1,885)	
Estrogen or progesterone	1,066	56.6
Androgen	916	48.6
Androgen-suppressing or -blocking medication	808	42.9
Time since last gender-affirming surgical treatment	All individuals with gender incongruence diagnosis (N=2,679)	
No surgical treatment	1,661	62.0
<1 year	353	13.2
1 year	221	8.2
2–3 years	198	7.4
4–5 years	110	4.1
6–7 years	68	2.5
8–9 years	49	1.8
≥10 years	19	0.7
Type of surgical procedures (more than one type is possible)	All individuals receiving gender-affirming surgical treatment (N=1,018)	
Breast or dermatological chest surgery	788	77.4
Surgery of the reproductive organs	540	53.0
Dermatological surgery	315	30.9
Laryngeal surgery	70	6.9

DISCUSSION

Taking advantage of total population registers containing diagnoses of gender incongruence, gender-related hormone and surgical treatment codes, and mental health treatment utilization, we examined the potential impact of gender-affirming hormone and surgical treatment on later mental health treatment utilization. The results also present the first known population prevalence of mood and anxiety disorder treatment and suicide attempts among transgender individuals compared with the general population. Overall, our results show that transgender individuals, here defined as those with a diagnosis of gender incongruence, are about six times as likely as the general population to have had a health care visit for any mood or anxiety disorder, between three and four times as likely to have received prescriptions for antidepressant or anxiolytic medication, and more than six times as likely to have been hospitalized after a suicide attempt. Time since initiating gender-affirming hormone treatment was not associated with these mental health treatment outcomes, whereas time since receiving gender-affirming surgery was significantly associated with a decrease in mental health treatment.

These findings begin to answer the call for population-based documentation of transgender health (1) and extend earlier evidence of associations between gender-affirming treatment and improved mental health mostly derived from studies utilizing cross-sectional designs or short follow-up periods, self-reported exposures and outcomes, and small nonprobability samples (2, 10, 11). In addition to showing that transgender individuals are more likely to utilize mental health treatments than the general population, the results suggest that gender-affirming treatments may reduce this risk. Specifically, the odds of receiving mental health treatment in 2015 were reduced by 8% for every year since

FIGURE 1. Prevalence of treatment for mood or anxiety disorders (health care visit or antidepressant or anxiolytic prescription) and hospitalization after suicide attempt in 2015 among individuals with a gender incongruence diagnosis, by number of years since last gender-affirming surgery



receiving gender-affirming surgery over the 10-year follow-up period. Despite this linear decrease, even 10 years after receiving such treatments, the prevalence of mental health treatment utilization continued to exceed that of the general Swedish population (24), suggesting the need to address factors in addition to gender-affirming treatment availability that may strengthen transgender individuals' mental health. Such factors may include reductions in structural (e.g., economic inequality), interpersonal (e.g., victimization), and psychosocial (e.g., identity concealment) stressors to which transgender individuals are disproportionately exposed (4, 24). Ensuring access to transgender-affirming mental health care may also further reduce transgender individuals' persistent psychiatric risk (25). Although the prevalence of hospitalization after suicide attempt among those with a gender incongruence diagnosis was too small for statistical testing, the numbers who were treated after a suicide attempt decreased as a function of years since last gender-affirming surgery. Among those who received their last gender-affirming surgery more than 3 years ago, no suicide attempts were registered.

Despite the notable methodological strengths of utilizing data from a total population, the results should be interpreted in light of several limitations. First, the criterion used here to define the transgender population does not capture the full spectrum of those who identify as transgender. We specifically lacked information regarding gender assigned at birth, legal gender change, and gender identity at the time of data collection, preventing subgroup analyses of the transgender population (26). Recent estimates across five countries suggest that between 0.4% and 1.3% of the population may identify as transgender, including gender-nonconforming individuals who do not seek gender-affirming hormone or surgical treatment (18, 27–29). Although the transgender population in the present study is limited to individuals with a diagnosis of gender incongruence, this population is of particular concern to the medical community because of its high likelihood of seeking gender-affirming hormone and surgical treatments. Given the free availability of gender-affirming treatments in Sweden, our approach to ascertaining this particular population is likely highly sensitive. Our approach also did not include a comparison group of individuals who had sought but not yet received gender-affirming treatment. While this population might be able to serve as an important comparison group in future studies, without the ability to distinguish between those who had not received treatment because they are waiting for it and those not seeking it in the first place, the current data structure cannot provide this comparison. Longitudinal designs assessing within-person changes in treatment seeking, treatment receipt, and ultimate mental health outcomes would be essential for tracking mental health before and immediately after treatment. Because our approach could only ascertain suicide attempts among living individuals, longitudinal designs that allow for tracking completed suicide among decedents remains an important future direction.

Second, mental health treatment utilization is an imperfect proxy for mental health itself. Transgender people receiving treatment for gender incongruence are by definition exposed to treatment settings, which may disproportionately expose them to mental health treatment opportunities. Although the Swedish context of universal health care coverage removes financial barriers to treatment seeking, other unmeasured factors, such as general tendency toward treatment seeking or perceived discrimination in treatment settings, may influence the associations examined here. Third, because we derived information about outpatient psychiatric health care visits from national health care databases, we had limited information about the type of mental health treatment patients received, and we could not differentiate among individuals receiving psychotropic medication, psychotherapy, or both. Fourth, this study was conducted in a single high-income national context with legal protections for transgender individuals and universal health coverage, including for gender-affirming treatments. While this context makes the present study possible,

it also may constrain the generalizability of findings to low- and middle-income countries and to countries that lack transgender protections or universal health care coverage.

Overall, this study provides timely support for policies that ensure coverage of gender-affirming treatments. Although gender-affirming treatments are recommended as a medical necessity for appropriately selected individuals experiencing gender incongruence and are a covered health benefit in most developed countries, uncertainty exists, such as in the United States, regarding federal protections of transgender employees from transgender-related exclusions in employee benefits (30). In the context of such uncertainty, some U.S. states deny use of state funds to cover costs for gender-affirming treatments, and the Veterans Health Administration specifically prohibits gender-affirming surgery within Veterans Affairs (VA) facilities or use of VA funding for gender-affirming treatments (31, 32). To the extent that gender-affirmative medical interventions are interpreted as sterilization, many hospitals can refuse to provide such care, citing religious directives (33). Debates regarding the provision of gender-affirming health care are global, and in much of the world, such care is unavailable or largely unaffordable (29). Therefore, in many contexts around the world, lack of coverage for gender-affirming treatments drives the use of non–medically supervised hormones and surgeries, thereby exacerbating physical health risks (34) and the other epidemics disproportionately borne by the global transgender population, including suicide and HIV infection. The longitudinal association found in the present study between gender-affirming surgery and reduced mental health treatment utilization, combined with the physical and mental health risks of surgery denial, supports policies that provide gender-affirming surgeries to transgender individuals who seek such treatments.

ADDENDUM

After this article was published online on October 4, 2019, some letters containing questions on the statistical methodology employed led the *Journal* to seek statistical consultations. The results of these consultations were presented to us and we concurred with many of the points raised. The letters (35-41) and our response to them (42) appear in the Letters to the Editor section of the August 2020 issue of the *Journal*.

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Correction to Bränström and Pachankis

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Long-Term Follow-Up of Transsexual Persons Undergoing Sex Reassignment Surgery: Cohort Study in Sweden

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Abstract

Context: The treatment for transsexualism is sex reassignment, including hormonal treatment and surgery aimed at making the person's body as congruent with the opposite sex as possible. There is a dearth of long term, follow-up studies after sex reassignment.

Objective: To estimate mortality, morbidity, and criminal rate after surgical sex reassignment of transsexual persons.

Design: A population-based matched cohort study.

Setting: Sweden, 1973-2003.

Participants: All 324 sex-reassigned persons (191 male-to-females, 133 female-to-males) in Sweden, 1973–2003. Random population controls (10:1) were matched by birth year and birth sex or reassigned (final) sex, respectively.

Main Outcome Measures: Hazard ratios (HR) with 95% confidence intervals (CI) for mortality and psychiatric morbidity were obtained with Cox regression models, which were adjusted for immigrant status and psychiatric morbidity prior to sex reassignment (adjusted HR [aHR]).

Results: The overall mortality for sex-reassigned persons was higher during follow-up (aHR 2.8; 95% CI 1.8–4.3) than for controls of the same birth sex, particularly death from suicide (aHR 19.1; 95% CI 5.8–62.9). Sex-reassigned persons also had an increased risk for suicide attempts (aHR 4.9; 95% CI 2.9–8.5) and psychiatric inpatient care (aHR 2.8; 95% CI 2.0–3.9). Comparisons with controls matched on reassigned sex yielded similar results. Female-to-males, but not male-to-females, had a higher risk for criminal convictions than their respective birth sex controls.

Conclusions: Persons with transsexualism, after sex reassignment, have considerably higher risks for mortality, suicidal behaviour, and psychiatric morbidity than the general population. Our findings suggest that sex reassignment, although alleviating gender dysphoria, may not suffice as treatment for transsexualism, and should inspire improved psychiatric and somatic care after sex reassignment for this patient group.

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Introduction

Transsexualism (ICD-10),[1] or gender identity disorder (DSM-IV),[2] is a condition in which a person's gender identity - the sense of being a man or a woman - contradicts his or her bodily sex characteristics. The individual experiences gender dysphoria and desires to live and be accepted as a member of the opposite sex.

The treatment for transsexualism includes removal of body hair, vocal training, and cross-sex hormonal treatment aimed at making the person's body as congruent with the opposite sex as possible to alleviate the gender dysphoria. Sex reassignment also involves the surgical removal of body parts to make external sexual characteristics resemble those of the opposite sex, so called sex reassignment/confirmation surgery (SRS). This is a unique

intervention not only in psychiatry but in all of medicine. The present form of sex reassignment has been practised for more than half a century and is the internationally recognized treatment to ease gender dysphoria in transsexual persons.[3,4]

Despite the long history of this treatment, however, outcome data regarding mortality and psychiatric morbidity are scant. With respect to suicide and deaths from other causes after sex reassignment, an early Swedish study followed 24 transsexual persons for an average of six years and reported one suicide.[5] A subsequent Swedish study recorded three suicides after sex reassignment surgery of 175 patients.[6] A recent Swedish follow-up study reported no suicides in 60 transsexual patients, but one death due to complications after the sex reassignment surgery.[7] A Danish study reported death by suicide in 3 out of 29 operated male-to-female transsexual persons followed for an average of six years.[8] By contrast, a Belgian study of 107 transsexual persons followed for 4–6 years found no suicides or deaths from other causes.[9] A large Dutch single-centre study (N = 1,109), focusing on adverse events following hormonal treatment, compared the outcome after cross-sex hormone treatment with national Dutch standardized mortality and morbidity rates and found no increased mortality, with the exception of death from suicide and AIDS in male-to-females 25–39 years of age.[10] The same research group concluded in a recent report that treatment with cross-sex hormones seems acceptably safe, but with the reservation that solid clinical data are missing.[11] A limitation with respect to the Dutch cohort is that the proportion of patients treated with cross-sex hormones who also had surgical sex-reassignment is not accounted for.[10]

Data is inconsistent with respect to psychiatric morbidity post sex reassignment. Although many studies have reported psychiatric and psychological improvement after hormonal and/or surgical treatment,[7,12,13,14,15,16] other have reported on regrets,[17] psychiatric morbidity, and suicide attempts after SRS.[9,18] A recent systematic review and meta-analysis concluded that approximately 80% reported subjective improvement in terms of gender dysphoria, quality of life, and psychological symptoms, but also that there are studies reporting high psychiatric morbidity and suicide rates after sex reassignment.[19] The authors concluded though that the evidence base for sex reassignment "is of very low quality due to the serious methodological limitations of included studies."

The methodological shortcomings have many reasons. First, the nature of sex reassignment precludes double blind randomized controlled studies of the result. Second, transsexualism is rare [20] and many follow-ups are hampered by small numbers of subjects.[5,8,21,22,23,24,25,26,27,28] Third, many sex reassigned persons decline to participate in follow-up studies, or relocate after surgery, resulting in high drop-out rates and consequent selection bias.[6,9,12,21,24,28,29,30] Forth, several follow-up studies are hampered by limited follow-up periods.[7,9,21,22,26,30] Taken together, these limitations preclude solid and generalisable conclusions. A long-term population-based controlled study is one way to address these methodological shortcomings.

Here, we assessed mortality, psychiatric morbidity, and psychosocial integration expressed in criminal behaviour after sex reassignment in transsexual persons, in a total population cohort study with long-term follow-up information obtained from Swedish registers. The cohort was compared with randomly selected population controls matched for age and gender. We adjusted for premorbid differences regarding psychiatric morbidity and immigrant status. This study design sheds new light on transsexual persons' health after sex reassignment. It does not, however, address whether sex reassignment is an effective treatment or not.

Methods

National registers

The study population was identified by the linkage of several Swedish national registers, which contained a total of 13.8 million unique individuals. The Hospital Discharge Register (HDR, held by the National Board of Health and Welfare) contains discharge diagnoses, up to seven contributory diagnoses, external causes of morbidity or mortality, surgical procedure codes, and discharge date. Discharge diagnoses are coded according to the 8th (1969-1986), 9th (1987–1996), and 10th editions (1997-) of the International Classification of Diseases (ICD). The register covers virtually all psychiatric inpatient episodes in Sweden since 1973. Discharges that occurred up to 31 December 2003 were included. Surgical procedure codes could not be used for this study due to the lack of a specific code for sex reassignment surgery. The Total Population Register (TPR, held by Statistics Sweden) is comprised of data about the entire Swedish population. Through linkage with the Total Population Register it was possible to identify birth date and birth gender for all study subjects. The register is updated every year and gender information was available up to 2004/2005. The Medical Birth Register (MBR) was established in 1973 and contains birth data, including gender of the child at birth. National censuses based on mandatory self-report questionnaires completed by all adult citizens in 1960, 1970, 1980, and 1990 provided information on individuals, households, and dwellings, including gender, living area, and highest educational level. Complete migration data, including country of birth for immigrants for 1969–2003, were obtained from the TPR. In addition to educational information from the censuses, we also obtained highest educational level data for 1990 and 2000 from the Register of Education. The Cause of Death Register (CDR, Statistics Sweden) records all deaths in Sweden since 1952 and provided information on date of death and causes of death. Death events occurring up to 31 December 2003 are included in the study. The Crime Register (held by the National Council of Crime Prevention) provided information regarding crime type and date on all criminal convictions in Sweden during the period 1973–2004. Attempted and aggravated forms of all offences were also included. All crimes in Sweden are registered regardless of insanity at the time of perpetration; for example, for individuals who suffered from psychosis at the time of the offence. Moreover, conviction data include individuals who received custodial or non-custodial sentences and cases where the prosecutor decided to caution or fine without court proceedings. Finally, Sweden does not differ considerably from other members of the European Union regarding rates of violent crime and their resolution.[31]

Study population, identification of sex-reassigned persons (exposure assessment)

The study was designed as a population-based matched cohort study. We used the individual national registration number, assigned to all Swedish residents, including immigrants on arrival, as the primary key through all linkages. The registration number consists of 10 digits; the first six provide information of the birth date, whereas the ninth digit indicates the gender. In Sweden, a person presenting with gender dysphoria is referred to one of six specialised gender teams that evaluate and treat patients principally according to international consensus guidelines: Standards of Care.[3] With a medical certificate, the person applies to the National Board of Health and Welfare to receive permission for sex reassignment surgery and a change of legal sex status. A new national registration number signifying the new gender is assigned after sex reassignment surgery. The National

Board of Health and Welfare maintains a link between old and new national registration numbers, making it possible to follow individuals undergoing sex reassignment across registers and over time. Hence, sex reassignment surgery in Sweden requires (i) a transsexualism diagnosis and (ii) permission from the National Board of Health and Welfare.

A person was defined as exposed to sex reassignment surgery if two criteria were met: (i) at least one inpatient diagnosis of gender identity disorder diagnosis without concomitant psychiatric diagnoses in the Hospital Discharge Register, and (ii) at least one discrepancy between gender variables in the Medical Birth Register (from 1973 and onwards) or the National Censuses from 1960, 1970, 1980, or 1990 and the latest gender designation in the Total Population Register. The first criterion was employed to capture the hospitalization for sex reassignment surgery that serves to secure the diagnosis and provide a time point for sex reassignment surgery; the plastic surgeons namely record the reason for sex reassignment surgery, i.e., transsexualism, but not any co-occurring psychiatric morbidity. The second criterion was used to ensure that the person went through all steps in sex-reassignment and also changed sex legally.

The date of sex reassignment (start of follow-up) was defined as the first occurrence of a gender identity disorder diagnosis, without any other concomitant psychiatric disorder, in the Hospital Discharge Register after the patient changed sex status (any discordance in sex designation across the Censuses, Medical Birth, and Total Population registers). If this information was missing, we used instead the closest date in the Hospital Discharge Register on which the patient was diagnosed with gender identity disorder without concomitant psychiatric disorder prior to change in sex status. The reason for prioritizing the use of a gender identity disorder diagnosis *after* changed sex status over *before* was to avoid overestimating person-years at risk of sex-reassigned person.

Using these criteria, a total of 804 patients with gender identity disorder were identified, whereof 324 displayed a shift in the gender variable during the period 1973–2003. The 480 persons that did not shift gender variable comprise persons who either did not apply, or were not approved, for sex reassignment surgery. Moreover, the ICD 9 code 302 is a non specific code for sexual disorders. Hence, this group might also comprise persons that were hospitalized for sexual disorders other than transsexualism. Therefore, they were omitted from further analyses. Of the remaining 324 persons, 288 were identified with the gender identity diagnosis *after* and 36 *before* change of sex status. Out of the 288 persons identified *after* changed sex status, 185 could also be identified *before* change in sex status. The median time lag between the hospitalization *before* and *after* sex change for these 185 persons was 0.96 years (mean 2.2 years, SD 3.3).

Gender identity disorder was coded according to ICD-8: 302.3 (transsexualism) and 302.9 (sexual deviation NOS); ICD-9: 302 (overall code for sexual deviations and disorders, more specific codes were not available in ICD-9); and ICD-10: F64.0 (transsexualism), F64.1 (dual-role transvestism), F64.8 (other gender identity disorder), and F64.9 (gender identity disorder NOS). Other psychiatric disorders were coded as ICD-8: 290-301 and 303-315; ICD-9: 290-301 and 303-319; and ICD-10: F00-F63 as well as F65-F99.

Identification of population-based controls (unexposed group)

For each exposed person (N = 324), we randomly selected 10 unexposed controls. A person was defined as unexposed if there were no discrepancies in sex designation across the Censuses, Medical Birth, and Total Population registers *and* no gender identity disorder diagnosis according to the Hospital Discharge Register. Control persons were matched by sex and birth year and had to be alive and residing in Sweden at the estimated sex reassignment date of the case person. To study possible gender-specific effects on outcomes of interest, we used two different control groups: one with the same sex as the case individual at birth (birth sex matching) and the other with the sex that the case individual had been reassigned to (final sex matching).

Outcome measures

We studied mortality, psychiatric morbidity, accidents, and crime following sex reassignment. More specifically, we investigated: (1) all-cause mortality, (2) death by definite/uncertain suicide, (3) death by cardiovascular disease, and (4) death by tumour. Morbidity included (5) any psychiatric disorder (gender identity disorders excluded), (6) alcohol/drug misuse and dependence, (7) definite/uncertain suicide attempt, and (8) accidents. Finally, we addressed court convictions for (9) any criminal offence and (10) any violent offence. Each individual could contribute with several outcomes, but only one event per outcome. Causes of death (Cause of Death Registry from 1952 and onwards) were defined according to ICD as suicide (ICD-8 and ICD-9 codes E950-E959 and E980-E989, ICD-10 codes X60-X84 and Y10-Y34); cardiovascular disease (ICD-8 codes 390-458, ICD-9 codes 390-459, ICD-10 codes I00-I99); neoplasms (ICD-8 and ICD-9 codes 140-239, ICD-10 codes C00-D48), any psychiatric disorder (gender identity disorders excluded); (ICD-8 codes 290-301 and 303-315, ICD-9 codes 290-301 and 303-319, ICD-10 codes F00-F63 and F65-F99); alcohol/drug abuse and dependence (ICD-8 codes 303-304, ICD-9 codes 303-305 (tobacco use disorder excluded), ICD-10 codes F10-F16 and F18-F19 (x5 excluded); and accidents (ICD-8 and ICD-9 codes E800-E929, ICD-10 codes V01-X59).

Any criminal conviction during follow-up was counted; specifically, violent crime was defined as homicide and attempted homicide, aggravated assault and assault, robbery, threatening behaviour, harassment, arson, or any sexual offense.[32]

Covariates

Severe psychiatric morbidity was defined as inpatient care according to ICD-8 codes 291, 295-301, 303-304, and 307; ICD-9 codes 291-292, 295-298, 300-301, 303-305 (tobacco use disorder excluded), 307.1, 307.5, 308-309, and 311; ICD-10 codes F10-F16, F18-F25, F28-F45, F48, F50, and F60-F62. Immigrant status, defined as individuals born abroad, was obtained from the Total Population Register. All outcome/covariate variables were dichotomized (i.e., affected or unaffected) and without missing values.

Statistical analyses

Each individual contributed person-time from study entry (for exposed: date of sex reassignment; for unexposed: date of sex reassignment of matched case) until date of outcome event, death, emigration, or end of study period (31 December 2003), whichever came first. The association between exposure (sex reassignment) and outcome (mortality, morbidity, crime) was measured by hazard ratios (HR) with 95% CIs, taking follow-up time into account. HRs were estimated from Cox proportional hazard regression models, stratified on matched sets (1:10) to account for the matching by sex, age, and calendar time (birth year). We present crude HRs (though adjusted for sex and age through matching) and confounder-adjusted HRs [aHRs] for all outcomes. The two potential confounders, immigrant status (yes/no) and history of severe psychiatric morbidity (yes/no) prior to sex

reassignment, were chosen based on previous research[18,33] and different prevalence across cases and controls (Table 1).

Gender-separated analyses were performed and a Kaplan-Meier survival plot graphically illustrates the survival of the sex reassigned cohort and matched controls (all-cause mortality) over time. The significance level was set at 0.05 (all tests were two-sided). All outcome/covariate variables were without missing values, since they are generated from register data, which are either present (affected) or missing (unaffected). The data were analysed using SAS version 9.1 (SAS Institute Inc., Cary, NC, USA).

Ethics

The data linking of national registers required for this study was approved by the IRB at Karolinska Institutet, Stockholm. All data were analyzed anonymously; therefore, informed consent for each individual was neither necessary nor possible.

Results

We identified 324 transsexual persons (exposed cohort) who underwent sex reassignment surgery and were assigned a new legal sex between 1973 and 2003. These constituted the sex-reassigned (exposed) group. Fifty-nine percent (N = 191) of sex-reassigned persons were male-to-females and 41% (N = 133) female-to-males, yielding a sex ratio of 1.4:1 (Table 1).

The average follow-up time for all-cause mortality was 11.4 (median 9.1) years. The average follow-up time for the risk of being hospitalized for any psychiatric disorder was 10.4 (median 8.1).

Characteristics prior to sex reassignment

Table 1 displays demographic characteristics of sex-reassigned and control persons prior to study entry (sex reassignment). There were no substantial differences between female-to-males and male-to-females regarding measured baseline characteristics. Immigrant status was twice as common among transsexual individuals compared to controls, living in an urban area somewhat more common, and higher education about equally prevalent. Transsexual individuals had been hospitalized for psychiatric morbidity other than gender identity disorder prior to sex reassignment about four times more often than controls. To adjust for these baseline discrepancies, hazard ratios adjusted for immigrant status and psychiatric morbidity prior to baseline are presented for all outcomes [aHRs].

Mortality

Table 2 describes the risks for selected outcomes during follow-up among sex-reassigned persons, compared to same-age controls of the same birth sex. Sex-reassigned transsexual persons of both genders had approximately a three times higher risk of all-cause mortality than controls, also after adjustment for covariates. Table 2

Table 1. Baseline characteristics among sex-reassigned subjects in Sweden (N = 324) and population controls matched for birth year and sex.

Characteristic at baseline	Sex-reassigned subjects (N = 324)	Birth-sex matched controls (N = 3,240)	Final-sex matched controls (N = 3,240)
Gender			
Female at birth, male after sex change	133 (41%)	1,330 (41%)	1,330 (41%)
Male at birth, female after sex change	191 (59%)	1,910 (59%)	1,910 (59%)
Average age at study entry [years] (SD, min-max)			
Female at birth, male after sex change	33.3 (8.7, 20–62)	33.3 (8.7, 20–62)	33.3 (8.7, 20–62)
Male at birth, female after sex change	36.3 (10.1, 21–69)	36.3 (10.1, 21–69)	36.3 (10.1, 21–69)
Both genders	35.1 (9.7, 20–69)	35.1 (9.7, 20–69)	35.1 (9.7, 20–69)
Immigrant status			
Female at birth, male after sex change	28 (21%)	118 (9%)	100 (8%)
Male at birth, female after sex change	42 (22%)	176 (9%)	164 (9%)
Both genders	70 (22%)	294 (9%)	264 (8%)
Less than 10 years of schooling prior to entry vs. 10 years or more			
Females at birth, males after sex change	49 (44%); 62 (56%)	414 (37%); 714 (63%)	407 (36%); 713 (64%)
Males at birth, females after sex change	61 (41%); 89 (59%)	665 (40%); 1,011 (60%)	595 (35%); 1,091 (65%)
All individuals with data	110 (42%); 151 (58%)	1,079 (38%); 1,725 (62%)	1,002 (36%); 1,804 (64%)
Psychiatric morbidity* prior to study entry			
Female at birth, male after sex change	22 (17%)	47 (4%)	42 (3%)
Male at birth, female after sex change	36 (19%)	76 (4%)	72 (4%)
Both genders	58 (18%)	123 (4%)	114 (4%)
Rural [vs. urban] living area prior to entry			
Female at birth, male after sex change	13 (10%)	180 (14%)	195 (15%)
Male at birth, female after sex change	20 (10%)	319 (17%)	272 (14%)
Both genders	33 (10%)	499 (15%)	467 (14%)

Note:
*Hospitalizations for gender identity disorder were not included.
doi:10.1371/journal.pone.0016885.t001

Table 2. Risk of various outcomes among sex-reassigned subjects in Sweden (N = 324) compared to population controls matched for birth year and birth sex.

	Number of events cases/ controls 1973–2003	Outcome incidence rate per 1000 person-years 1973–2003 (95% CI)		Crude hazard ratio (95% CI) 1973–2003	Adjusted* hazard ratio (95% CI) 1973–2003	Adjusted* hazard ratio (95% CI) 1973–1988	Adjusted* hazard ratio (95% CI) 1989–2003
		Cases	Controls				
Any death	27/99	7.3 (5.0–10.6)	2.5 (2.0–3.0)	2.9 (1.9–4.5)	2.8 (1.8–4.3)	3.1 (1.9–5.0)	1.9 (0.7–5.0)
Death by suicide	10/5	2.7 (1.5–5.0)	0.1 (0.1–0.3)	19.1 (6.5–55.9)	19.1 (5.8–62.9)	N/A	N/A
Death by cardiovascular disease	9/42	2.4 (1.3–4.7)	1.1 (0.8–1.4)	2.6 (1.2–5.4)	2.5 (1.2–5.3)	N/A	N/A
Death by neoplasm	8/38	2.2 (1.1–4.3)	1.0 (0.7–1.3)	2.1 (1.0–4.6)	2.1 (1.0–4.6)	N/A	N/A
Any psychiatric hospitalisation‡	64/173	19.0 (14.8–24.2)	4.2 (3.6–4.9)	4.2 (3.1–5.6)	2.8 (2.0–3.9)	3.0 (1.9–4.6)	2.5 (1.4–4.2)
Substance misuse	22/78	5.9 (3.9–8.9)	1.8 (1.5–2.3)	3.0 (1.9–4.9)	1.7 (1.0–3.1)	N/A	N/A
Suicide attempt	29/44	7.9 (5.5–11.4)	1.0 (0.8–1.4)	7.6 (4.7–12.4)	4.9 (2.9–8.5)	7.9 (4.1–15.3)	2.0 (0.7–5.3)
Any accident	32/233	9.0 (6.3–12.7)	5.7 (5.0–6.5)	1.6 (1.1–2.3)	1.4 (1.0–2.1)	1.6 (1.0–2.5)	1.1 (0.5–2.2)
Any crime	60/350	18.5 (14.3–23.8)	9.0 (8.1–10.0)	1.9 (1.4–2.5)	1.3 (1.0–1.8)	1.6 (1.1–2.4)	0.9 (0.6–1.5)
Violent crime	14/61	3.6 (2.1–6.1)	1.4 (1.1–1.8)	2.7 (1.5–4.9)	1.5 (0.8–3.0)	N/A	N/A

Notes:
*Adjusted for psychiatric morbidity prior to baseline and immigrant status.
‡Hospitalisations for gender identity disorder were excluded.
N/A Not applicable due to sparse data.
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separately lists the outcomes depending on when sex reassignment was performed: during the period 1973-1988 or 1989–2003. Even though the overall mortality was increased across both time periods, it did not reach statistical significance for the period 1989–2003. The Kaplan-Meier curve (Figure 1) suggests that survival of transsexual persons started to diverge from that of matched controls after about 10 years of follow-up. The cause-specific mortality from suicide was much higher in sex-reassigned persons, compared to matched controls. Mortality due to cardiovascular disease was moderately increased among the sex-reassigned, whereas the numerically increased risk for malignancies was borderline statistically significant. The malignancies were lung cancer (N = 3), tongue cancer (N = 1), pharyngeal cancer (N = 1), pancreas cancer (N = 1), liver cancer (N = 1), and unknown origin (N = 1).

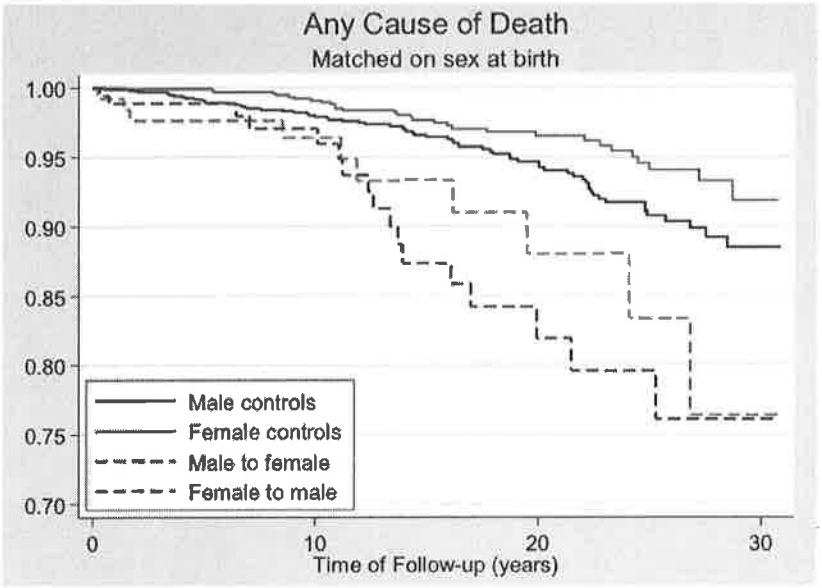

Figure 1. Death from any cause as a function of time after sex reassignment among 324 transsexual persons in Sweden (male-to-female: N = 191, female-to-male: N = 133), and population controls matched on birth year.
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Psychiatric morbidity, substance misuse, and accidents

Sex-reassigned persons had a higher risk of inpatient care for a psychiatric disorder other than gender identity disorder than controls matched on birth year and birth sex (Table 2). This held after adjustment for prior psychiatric morbidity, and was true regardless of whether sex reassignment occurred before or after 1989. In line with the increased mortality from suicide, sex-reassigned individuals were also at a higher risk for suicide attempts, though this was not statistically significant for the time period 1989–2003. The risks of being hospitalised for substance misuse or accidents were not significantly increased after adjusting for covariates (Table 2).

Crime rate

Transsexual individuals were at increased risk of being convicted for any crime or violent crime after sex reassignment (Table 2); this was, however, only significant in the group who underwent sex reassignment before 1989.

Gender differences

Comparisons of female-to-males and male-to-females, although hampered by low statistical power and associated wide confidence intervals, suggested mostly similar risks for adverse outcomes (Tables S1 and S2). However, violence against self (suicidal behaviour) and others ([violent] crime) constituted important exceptions. First, male-to-females had significantly increased risks for suicide attempts compared to both female (aHR 9.3; 95% CI 4.4–19.9) and male (aHR 10.4; 95% CI 4.9–22.1) controls. By contrast, female-to-males had significantly increased risk of suicide attempts only compared to male controls (aHR 6.8; 95% CI 2.1–21.6) but not compared to female controls (aHR 1.9; 95% CI 0.7–4.8). This suggests that male-to-females are at higher risk for suicide attempts after sex reassignment, whereas female-to-males maintain a female pattern of suicide attempts after sex reassignment (Tables S1 and S2).

Second, regarding any crime, male-to-females had a significantly increased risk for crime compared to female controls (aHR 6.6; 95% CI 4.1–10.8) but not compared to males (aHR 0.8; 95% CI 0.5–1.2). This indicates that they retained a male pattern regarding criminality. The same was true regarding violent crime. By contrast, female-to-males had higher crime rates than female controls (aHR 4.1; 95% CI 2.5–6.9) but did not differ from male controls. This indicates a shift to a male pattern regarding criminality and that sex reassignment is coupled to increased crime rate in female-to-males. The same was true regarding violent crime.

Discussion

Principal findings and comparison with previous research

We report on the first nationwide population-based, long-term follow-up of sex-reassigned transsexual persons. We compared our cohort with randomly selected population controls matched for age and gender. The most striking result was the high mortality rate in both male-to-females and female-to males, compared to the general population. This contrasts with previous reports (with one exception[8]) that did not find an increased mortality rate after sex reassignment, or only noted an increased risk in certain subgroups.[7,9,10,11] Previous clinical studies might have been biased since people who regard their sex reassignment as a failure are more likely to be lost to follow-up. Likewise, it is cumbersome to track deceased persons in clinical follow-up studies. Hence, population-based register studies like the present are needed to improve representativity.[19,34]

The poorer outcome in the present study might also be explained by longer follow-up period (median >10 years) compared to previous studies. In support of this notion, the survival curve (Figure 1) suggests increased mortality from ten years after sex reassignment and onwards. In accordance, the overall mortality rate was only significantly increased for the group operated before 1989. However, the latter might also be explained by improved health care for transsexual persons during 1990s, along with altered societal attitudes towards persons with different gender expressions.[35]

Mortality due to cardiovascular disease was significantly increased among sex reassigned individuals, albeit these results should be interpreted with caution due to the low number of events. This contrasts, however, a Dutch follow-up study that reported no increased risk for cardiovascular events.[10,11] A recent meta-analysis concluded, however, that data on cardiovascular outcome after cross-sex steroid use are sparse, inconclusive, and of very low quality.[34]

With respect to neoplasms, prolonged hormonal treatment might increase the risk for malignancies,[36] but no previous study has tested this possibility. Our data suggested that the cause-specific risk of death from neoplasms was increased about twice (borderline statistical significance). These malignancies (see Results), however, are unlikely to be related to cross-hormonal treatment.

There might be other explanations to increased cardiovascular death and malignancies. Smoking was in one study reported in almost 50% by the male-to females and almost 20% by female-to-males.[9] It is also possible that transsexual persons avoid the health care system due to a presumed risk of being discriminated.

Mortality from suicide was strikingly high among sex-reassigned persons, also after adjustment for prior psychiatric morbidity. In line with this, sex-reassigned persons were at increased risk for suicide attempts. Previous reports [6,8,10,11] suggest that transsexualism is a strong risk factor for suicide, also after sex reassignment, and our long-term findings support the need for continued psychiatric follow-up for persons at risk to prevent this.

Inpatient care for psychiatric disorders was significantly more common among sex-reassigned persons than among matched controls, both before and after sex reassignment. It is generally accepted that transsexuals have more psychiatric ill-health than the general population prior to the sex reassignment.[18,21,22,33] It should therefore come as no surprise that studies have found high rates of depression,[9] and low quality of life[16,25] also after sex reassignment. Notably, however, in this study the increased risk for psychiatric hospitalisation persisted even after adjusting for psychiatric hospitalisation prior to sex reassignment. This suggests that even though sex reassignment alleviates gender dysphoria, there is a need to identify and treat co-occurring psychiatric morbidity in transsexual persons not only before but also after sex reassignment.

Criminal activity, particularly violent crime, is much more common among men than women in the general population. A previous study of all applications for sex reassignment in Sweden up to 1992 found that 9.7% of male-to-female and 6.1% of female-to-male applicants had been prosecuted for a crime.[33] Crime after sex reassignment, however, has not previously been studied. In this study, male-to-female individuals had a higher risk for criminal convictions compared to female controls but not compared to male controls. This suggests that the sex reassignment procedure neither increased nor decreased the risk for criminal offending in male-to-females. By contrast, female-to-males were at a higher risk for criminal convictions compared to female controls and did not differ from male controls, which suggests increased crime proneness in female-to-males after sex reassignment.

Strengths and limitations of the study

Strengths of this study include nationwide representativity over more than 30 years, extensive follow-up time, and minimal loss to follow-up. Many previous studies suffer from low outcome ascertainment,[6,9,21,29] whereas this study has captured almost the entire population of sex-reassigned transsexual individuals in Sweden from 1973–2003. Moreover, previous outcome studies have mixed pre-operative and post-operative transsexual persons,[22,37] while we included only post-operative transsexual persons that also legally changed sex. Finally, whereas previous studies either lack a control group or use standardised mortality rates or standardised incidence rates as comparisons,[9,10,11] we selected random population controls matched by birth year, and either birth or final sex.

Given the nature of sex reassignment, a double blind randomized controlled study of the result after sex reassignment is not feasible. We therefore have to rely on other study designs. For the purpose of evaluating whether sex reassignment is an effective treatment for gender dysphoria, it is reasonable to compare reported gender dysphoria pre and post treatment. Such studies have been conducted either prospectively[7,12] or retrospectively,[5,6,9,22,25,26,29,38] and suggest that sex reassignment of transsexual persons improves quality of life and gender dysphoria. The limitation is of course that the treatment has not been assigned randomly and has not been carried out blindly.

For the purpose of evaluating the safety of sex reassignment in terms of morbidity and mortality, however, it is reasonable to compare sex reassigned persons with matched population controls. The caveat with this design is that transsexual persons before sex reassignment might differ from healthy controls (although this bias can be statistically corrected for by adjusting for baseline differences). It is therefore important to note that the current study is only informative with respect to transsexuals persons health after sex reassignment; no inferences can be drawn as to the effectiveness of sex reassignment as a treatment for transsexualism. In other words, the results should not be interpreted such as sex reassignment *per se* increases morbidity and mortality. Things might have been even worse without sex reassignment. As an analogy, similar studies have found increased somatic morbidity, suicide rate, and overall mortality for patients treated for bipolar disorder and schizophrenia.[39,40] This is important information, but it does not follow that mood stabilizing treatment or antipsychotic treatment is the culprit.

Other facets to consider are first that this study reflects the outcome of psychiatric and somatic treatment for transsexualism provided in Sweden during the 1970s and 1980s. Since then, treatment has evolved with improved sex reassignment surgery, refined hormonal treatment,[11,41] and more attention to psychosocial care that might have improved the outcome. Second, transsexualism is a rare condition and Sweden is a small country (9.2 million inhabitants in 2008). Hence, despite being based on a comparatively large national cohort and long-term follow-up, the statistical power was limited. Third, regarding psychiatric morbidity after sex reassignment, we assessed inpatient psychiatric care. Since most psychiatric care is provided in outpatient settings (for which no reliable data were available), underestimation of the *absolute* prevalences was inevitable. However, there is no reason to believe that this would change the *relative risks* for psychiatric morbidity unless sex-reassigned transsexual individuals were more likely than matched controls to be admitted to hospital for any given psychiatric condition.

Finally, to estimate start of follow-up, we prioritized using the date of a gender identity disorder diagnosis *after* changed sex status over *before* changed sex status, in order to avoid overestimating person-years at risk after sex-reassignment. This means that adverse outcomes might have been underestimated. However, given that the median time lag between the hospitalization before and after change of sex status was less than a year (see Methods), this maneuver is unlikely to have influenced the results significantly. Moreover, all deaths will be recorded regardless of this exercise and mortality hence correctly estimated.

Conclusion

This study found substantially higher rates of overall mortality, death from cardiovascular disease and suicide, suicide attempts, and psychiatric hospitalisations in sex-reassigned transsexual individuals compared to a healthy control population. This highlights that post surgical transsexuals are a risk group that need long-term psychiatric and somatic follow-up. Even though surgery and hormonal therapy alleviates gender dysphoria, it is apparently not sufficient to remedy the high rates of morbidity and mortality found among transsexual persons. Improved care for the transsexual group after the sex reassignment should therefore be considered.

Supporting Information

Table S1 Risk of various outcomes in sex-reassigned persons in Sweden compared to population controls matched for birth year and *birth sex*.
(DOCX)

Table S2 Risk of various outcomes in sex-reassigned persons in Sweden compared to controls matched for birth year and *final sex*.
(DOCX)

Author Contributions

Conceived and designed the experiments: CD PL AJ NL ML. Performed the experiments: MB AJ. Analyzed the data: CD PL MB AJ NL ML. Contributed reagents/materials/analysis tools: PL NL AJ. Wrote the paper: CD PL MB AJ NL ML.

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PATIENT SAFETY
Outcomes Article

Evidence-Based Patient Safety Advisory: Blood Dyscrasias

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Summary: Rarely, patients with blood disorders may seek to undergo plastic surgery. Although plastic surgeons are not expected to diagnose or manage blood disorders, they should be able to recognize which patients are suitable for surgery and which should be referred to a hematologist before a procedure. This practice advisory provides an overview of the perioperative steps that should be completed to ensure appropriate care for patients with blood disorders. (*Plast. Reconstr. Surg.* 124 (Suppl.): 82S, 2009.)

The term "blood dyscrasia" refers to any pathologic condition of the blood involving disorders of the blood's cellular components (platelets, white blood cells, or red blood cells) or soluble plasma components required for proper coagulation (coagulation factors). In general, most of these blood disorders can be broken down into two basic categories based on the patient's coagulation phenotype: hypocoagulable (hemorrhagic) states and hypercoagulable (thrombotic) states. Each category includes heritable and acquired causes.

During normal hemostasis, various factors operate in combination to arrest bleeding after vascular injury. Early in the coagulation response, platelets aggregate to form a plug at the site of the ruptured vessel. After initial bleeding control has been achieved, the platelet plug is stabilized by means of fibrin deposition, effectively sealing the break in the vessel and preventing further bleeding. Fibrin deposition is initiated by a cascading series of proteolytic events involving coagulation factors (Fig. 1). This efficient coagulation system is controlled at several steps by means of anticoagulant mechanisms to ensure that the clotting process remains localized to the area of damage.

Hypocoagulable patients typically have difficulty controlling bleeding as a result of decreased platelet numbers or loss-of-function mutations affecting specific clotting factors. By contrast, hypercoagulable patients typically exhibit excessive thrombus formation resulting from hyperactive platelet aggregation, increased platelet numbers, or mutations affecting the function of specific clotting factors (Fig. 1). Whatever the source of the defect in the coagulation cascade, these patients' risks of bleeding or thrombosis during surgery is increased significantly over the normal patient, and complications may result if they are not diagnosed or treated appropriately.

There is a paucity of published clinical research pertaining to the perioperative care of surgical patients with blood dyscrasias. In an effort to ensure patient safety, the American Society of Plastic Surgeons (ASPS) Patient Safety Committee sought to develop a practice advisory to assist decision-making for patients with blood disorders who seek to undergo elective surgical procedures. The current practice advisory thus provides an overview of the perioperative steps that should be completed to ensure appropriate care for these patients. These guidelines are designed for use by

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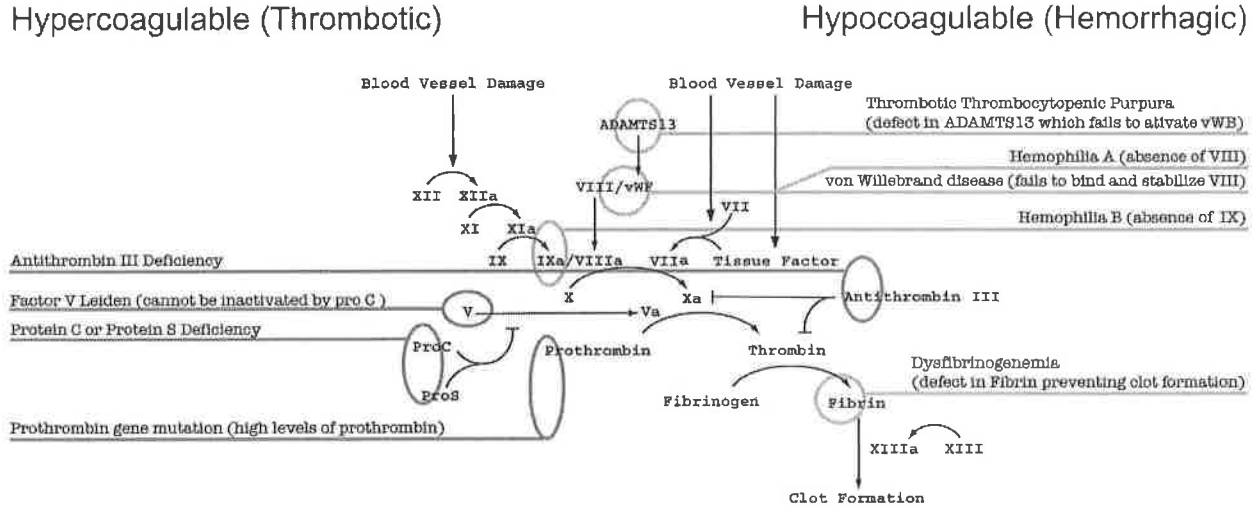

Fig. 1. The coagulation cascade and associated defects.

any health care practitioner managing the perioperative care of patients with bleeding disorders. Although plastic surgeons are not expected to manage hypocoagulable and hypercoagulable disorders, they should be able to recognize which patients are suitable for surgery and which should be referred to a hematologist before a procedure.

This patient safety advisory was developed through a comprehensive review of the scientific literature and a consensus of the Patient Safety Committee. The supporting literature was critically appraised for study quality according to criteria referenced in key publications on evidence-based medicine.[1–5] Depending on study design and quality, each reference was assigned a corresponding level of evidence (I through V) with the ASPS Evidence Rating Scale (Table 1),[6] and the evidence was synthesized into practice recommendations. The recommendations were then graded (A through D) with the ASPS Grades of Recommendation Scale (Table 2)[7]; grades correspond to the levels of evidence provided by the supporting literature for that recommendation. Practice recommendations are discussed throughout this document, and graded recommendations are summarized in Appendix A.

Table 1. Evidence Rating Scale for Studies Reviewed

Level of Evidence	Qualifying Studies
I	High-quality, multicentered or single-centered, randomized controlled trial with adequate power; or systematic review of these studies
II	Lesser quality, randomized controlled trial; prospective cohort study; or systematic review of these studies
III	Retrospective comparative study; case-control study; or systematic review of these studies
IV	Case series
V	Expert opinion; case report or clinical example; or evidence based on physiology, bench research, or "first principles"

DISCLAIMER

Practice advisories are strategies for patient management, developed to assist physicians in clinical decision-making. This practice advisory, based on a thorough evaluation of the present scientific literature and relevant clinical experience, describes a range of generally acceptable approaches to diagnosis, management, or prevention of specific diseases or conditions. This practice advisory attempts to define principles of practice that should generally meet the needs of most patients in most circumstances. However, this practice advisory should not be construed as a rule, nor should it be deemed inclusive of all proper methods of care or exclusive of other methods of care reasonably directed at obtaining the appropriate results. It is anticipated that it will be necessary to approach some patients' needs in different ways. The ultimate judgment regarding the care of a particular patient must be made by the physician in light of all the circumstances presented by the patient, the diagnostic and treatment options available, and available resources.

This practice advisory is not intended to define or serve as the standard of medical care. Standards of medical care are determined on the basis of all the facts or circumstances involved in an individual case and are subject to change as scien-

Table 2. Scale for Grading Recommendations

Grade	Descriptor	Qualifying Evidence	Implications for Practice
A	Strong recommendation	Level I evidence or consistent findings from multiple studies of levels II, III, or IV	Clinicians should follow a strong recommendation unless a clear and compelling rationale for an alternative approach is present.
B	Recommendation	Levels II, III, or IV evidence and findings are generally consistent	Generally, clinicians should follow a recommendation but should remain alert to new information and sensitive to patient preferences.
C	Option	Levels II, III, or IV evidence, but findings are inconsistent	Clinicians should be flexible in their decision-making regarding appropriate practice, although they may set bounds on alternatives; patient preference should have a substantial influencing role.
D	Option	Level V: Little or no systematic empirical evidence	Clinicians should consider all options in their decision-making and be alert to new published evidence that clarifies the balance of benefit versus harm; patient preference should have a substantial influencing role.

tific knowledge and technology advance, and as practice patterns evolve. This practice advisory reflects the state of knowledge current at the time of publication. Given the inevitable changes in the state of scientific information and technology, periodic review and revision will be necessary.

PATIENT SELECTION

Medical care has become sufficiently advanced that patients with complex blood disorders can safely undergo a variety of surgical procedures. However, there remain inherent risks associated with any surgical procedure, and these can be exacerbated in patients with blood dyscrasias. The literature is unclear about whether patients with blood dyscrasias are appropriate candidates for ambulatory surgery. Only minor outpatient procedures (e.g., dental) have been described in the literature. Most patients with hypocoagulable or hypercoagulable states need close monitoring for many days following surgery; however, this can now be accomplished with outpatient testing.

During the preoperative assessment, patients should be evaluated for a history of bleeding, bruising, or thrombosis, including any family history of these conditions. Evidence of unusual postsurgical bleeding, epistaxis, gingival bleeding, and (in women) menorrhagia and a history of pregnancy complications such as stillbirth, preterm delivery, and recurrent miscarriages may be signs of an undiagnosed blood dyscrasia.[8–15] In addition, patients should be asked about their use of antithrombotic drugs and other drugs/supplements (i.e., over-the-counter and herbal) that may affect coagulation.[8] In its evidence-based guidelines for managing patients with bleeding disorders,[16] the National Heart, Lung, and Blood Institute has provided appropriate questions to ask patients during the preoperative assessment (Appendix B).

Although routine screening of all patients is not recommended, patients who have a positive history for bleeding, bruising, or thrombosis should undergo preoperative coagulation and/or thrombophilia screening.[8,16,17] Initial hemostasis laboratory tests may include platelet count and complete blood count, activated partial thromboplastin time, prothrombin time, and optionally either a fibrinogen level or a thrombin time.[8,16] Bleeding time may be useful to detect severe blood disorders, but is often unreliable for detecting mild or moderate cases.[8,16] If initial tests are positive or inconclusive, referral may be necessary for further evaluation.

PERIOPERATIVE MANAGEMENT

For patients with hypocoagulable or hypercoagulable states who are candidates for surgical procedures, the following points should be taken into consideration when preparing a detailed preoperative plan for the treatment of local bleeding/thrombi formation:

- Hemostatic laboratory monitoring.
- The choice of treatment for the disorder.
- Preoperative confirmation of the treatment's effectiveness in the specific patient.
- The dose and duration of the treatment.
- Anticipated side effects of the treatment.

HYPOCOAGULABLE (HEMORRHAGIC) STATES

Hypocoagulable, or hemorrhagic, states are characterized by inappropriate or excessive bleeding and a failure to form blood clots. As with any

medical procedure, there are several possible complications that may arise in association with surgical treatment; however, in patients with hypocoagulable states, the risk of excessive bleeding is the primary concern.

Patients with hypocoagulable disorders taking prophylactic coagulation factors in combination with anticoagulants need to be closely monitored before, during, and after surgery. Medications administered for a particular disorder are often monitored to determine the effectiveness of the coagulation therapy. Coagulation is often monitored by activated partial thromboplastin time, prothrombin time, and other methods, similar to full coagulation workups typically performed preoperatively. Thrombin generation assays, which measure clotting time, the amount of thrombin that forms, and the time it remains active, have also been used to monitor coagulation efficiency in patients.[18] Thromboelastographic assessment, which determines the kinetics of clot formation and the strength and stability of the formed clot, has also been used to monitor coagulation in patients with these disorders.[19,20]

There are two sequelae of coagulation therapy that need to be considered. First, patients undergoing coagulation-factor replacement therapy to control bleeding need to be monitored closely and treated for possible thrombi formation.[21,22] Second, the development of inhibitors (antibodies) against human-derived factors is a common and serious complication of factor replacement therapy. Because of the complexity of controlling coagulation in patients who have developed inhibitors, the risks of elective procedures should be considered carefully, and these patients may not be candidates for elective surgery. If surgery is necessary, patients should undergo surgical procedures in centers with personnel well skilled in perioperative inhibitor management.[23,24]

The treatment of patients with hypocoagulable states depends on the cause and nature of the procedure. For patients with mild disease who are undergoing minor surgical procedures, desmopressin and/or antifibrinolytic agents may facilitate local hemostasis.[12,25,26] However, bleeding episodes and surgical procedures typically require the use of blood-derived or recombinant replacement factors (Fig. 2).[18,27–38] For patients who have developed inhibitors against standard factor replacements, therapies that bypass the inhibitors have been used.[23,39–46] Other treatments such as platelet concentrate, red blood cells, fresh frozen plasma, plasmapheresis, and cryoprecipitate have been described but depend on the type and severity of bleeding disorder.[20,47–50]

There are several specific conditions, either inherited or acquired, that can cause excessive bleeding. Below are descriptions of the most common bleeding disorders followed by recommendations for perioperative management. Because von Willebrand disease and hemophilia often require similar management, treatment/prophylactic options are discussed concurrently after their descriptions.

von Willebrand Disease

The von Willebrand factor, a multimeric plasma glycoprotein, normally functions to me-

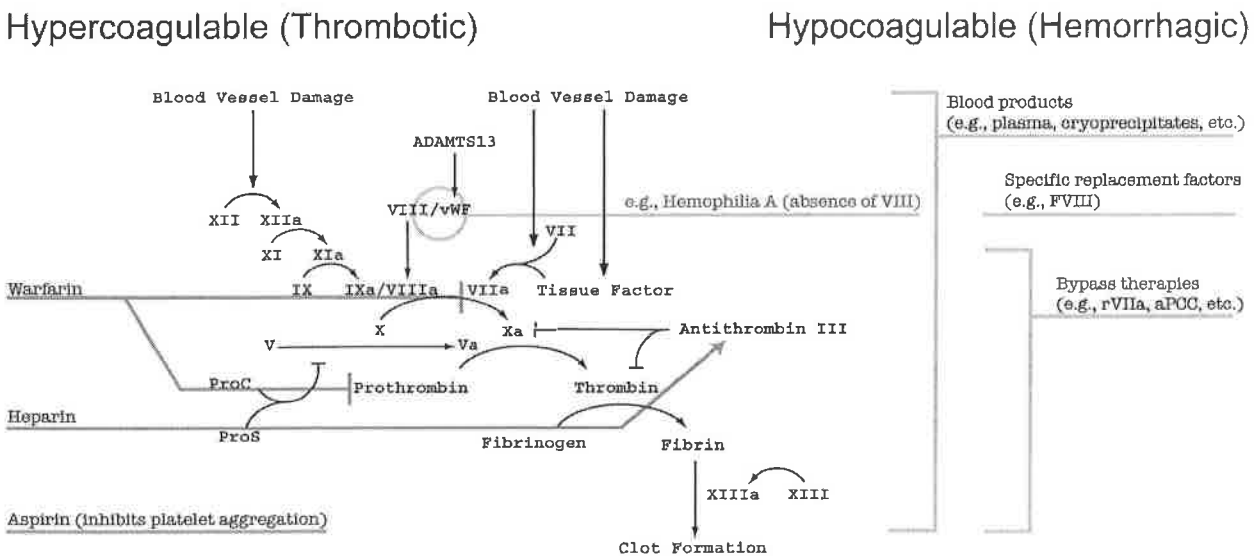

Fig. 2. Action of blood products and replacement factors on the coagulation cascade.

diate the initial adhesion of platelets and transport factor VIII to the site of vascular injury, promoting the activation of thrombin. The disease is typically characterized by defects in von Willebrand factor that cause low platelet adhesion and increased turnover of factor VIII, which results in the inhibition of normal blood-clotting mechanisms and an increased risk of bleeding.[51,52] Defects in von Willebrand factor can be attributable to a variety of mutations and/or abnormal multimer patterns.[51] After initial coagulation tests have been performed, specific tests for diagnosing or excluding the disease include von Willebrand factor ristocetin cofactor activity, von Willebrand factor antigen, and factor VIII activity. Additional tests may include evaluation of the ratio of von Willebrand factor activity (von Willebrand factor ristocetin cofactor activity and/or von Willebrand factor collagen binding) to von Willebrand factor antigen, ristocetin-induced platelet aggregation, and analysis of von Willebrand factor multimers.[16,53]

Von Willebrand disease cannot be attributed to one particular defect, as several distinct mechanisms have been identified, resulting in different forms of the disease. Three main types of the disease have been defined: type 1, the most common form, represents partial deficiency of von Willebrand factor; type 2 variants represent qualitative abnormalities of von Willebrand factor; and type 3 represents severe deficiency of von Willebrand factor (Table 3).[51] It is important to identify the type of von Willebrand disease, as each has important clinical features requiring specific therapeutic approaches.

Table 3. Classification of von Willebrand Disease*

Type	Description
1	Partial quantitative deficiency of vWF
2	Qualitative vWF defects
A	Decreased vWF-dependent platelet adhesion and a selective deficiency of high-molecular-weight vWF multimers
B	Increased affinity for platelet glycoprotein Ib
M	Decreased vWF-dependent platelet adhesion without a selective deficiency of high-molecular-weight vWF multimers
N	Markedly decreased binding affinity for factor VIII
3	Virtually complete deficiency of vWF

vWF, von Willebrand factor.
*From Sadler JE, Budde U, Eikenboom J, et al. Update on the pathophysiology and classification of von Willebrand disease: A report of the Subcommittee on von Willebrand Factor. *J Thromb Haemost.* 2006;4:2103–2114.

Hemophilia

Hemophilia is an inherited X-chromosome-linked disorder characterized by deficiencies of factor VIII (hemophilia A) and factor IX (hemophilia B). These factors normally act to promote the formation of active thrombin. Hemophilia results in decreased thrombin activation, which can inhibit normal blood-clotting mechanisms, thus increasing the risk of bleeding. Hemophilia is diagnosed with initial coagulation tests and specific factor assays, and is classified by bleeding risk (mild, moderate, or severe), which typically correlates with coagulation factor activity (Table 4).[54,55]

Prophylaxis and Treatment for von Willebrand Disease and Hemophilia

Desmopressin

1-Deamino-8-D-argenine vasopressin (desmopressin) is the first-line approach to prophylaxis and treatment in patients with von Willebrand disease and hemophilia A.[16,56]A synthetic analogue of vasopressin, desmopressin releases bound stores of von Willebrand factor and factor VIII from the vascular endothelium, thereby increasing the plasma concentration of these coagulation factors. Approximately 80 percent of patients with the disease respond favorably to desmopressin[57]; however, the response depends on the specific type and location of mutations and the multimeric pattern of von Willebrand factor.[52,58] Desmopressin is effective in most type 1 and some type 2 patients. Because type 3 patients are completely deficient in von Willebrand factor and have no bound stores to release, they are completely unresponsive to desmopressin.[16,57] In patients with hemophilia, response rates depend on the type and severity of disease. Patients with mild hemophilia A respond

Table 4. Classification of Hemophilia*

Classification	Residual Factor Concentration	Description
Mild	0.05–0.35 IU/ml or 5–35%	No spontaneous bleeding; delayed-onset bleeding after trauma, surgery, or dental extractions
Moderate	0.01–0.05 IU/ml or 1–5%	Bleeding into joints or muscles with minor trauma; excessive bleeding with surgery
Severe	<0.01 IU/ml or <1%	Spontaneous joint, muscle, and internal bleeding; excessive bleeding with trauma or surgery

*From Israels S, Schwetz N, Boyar R, McNicol A. Bleeding disorders: Characterization, dental considerations and management. *J Can Dent Assoc.* 2006;72:827.

favorably to the drug; patients with moderate to severe hemophilia A or any form of hemophilia B typically are unresponsive.[56,57]

The standard dosing of injectable desmopressin is 0.3 μg/kg administered intravenously in 30 to 50 ml of normal saline over 30 minutes, with peak increments of factor VIII and von Willebrand factor 30 to 90 minutes after infusion. Although desmopressin is also available in a nasal spray, intravenous administration is recommended for surgical procedures. Before surgery, a test infusion should be considered to evaluate the patient's response to desmopressin.[16,52,59]

Coagulation Factor Replacement

For patients who do not respond to desmopressin, the next approach involves replacement of deficient coagulation factors. Patients with von Willebrand disease often receive von Willebrand factor, typically by infusion of exogenous von Willebrand factor contained in plasma-derived von Willebrand factor/factor VIII concentrates.[22,27,28,30–32,50,60–62] Perioperative management with von Willebrand factor concentrates depends on the invasiveness of surgery. Table 5 lists the National Heart, Lung, and Blood Institute evidence-based guidelines for the perioperative use of von Willebrand factor concentrate in major and minor surgery.

Patients with hemophilia can be treated with plasma-derived or recombinant factor VIII or factor IX concentrates.[18,21,33,34,36–38,63–65] For perioperative management, recommended dosages vary by product but generally are 35 to 50 U/kg for factor VIII and 70 to 100 U/kg for factor IX, both with a target factor activity level of 0.7 to 1.0 U/ml (70 to 100 percent).[57]

Adjunctive Agents

Adjunctive agents, such as antifibrinolytics (e.g., tranexamic acid or ε-aminocaproic acid) and topical thrombin and fibrin sealants, can be used with desmopressin or replacement factors and may further facilitate hemostasis.[26,57] In some cases (dental and minor skin wounds), these agents may even be used alone to treat local bleeding.[66]

Patients with Inhibitors

Development of inhibitors against coagulation factors is the most common and serious complication of replacement therapy in patients with bleeding disorders. Although rare in patients with von Willebrand disease and hemophilia A, inhibitors develop in approximately 25 to 33 percent of patients with hemophilia B.[24,56,67] Newly and previously treated patients can develop inhibitors, justifying the need for frequent screening, especially before surgical procedures. Patients are diagnosed by inhibitor type (low or high-responding) and titer [measured in Bethesda units (BU)] as follows[24,67]:

- Low responders: patients have low titers (≤5 BU), even despite immunologic challenges.
- High responders, low titer: patients have low titers at evaluation that become high (>5 BU) in response to immunologic challenges.
- High responder, high titer: patients have high titer on evaluation; titers can decrease over time in some patients.

There are several hemostatic products available for patients with inhibitors; however, treatment depends on the type and current titer of the inhibitor. Typically, low-responding inhibitors can be overcome by high doses of plasma-derived or recombinant factor VIII or factor IX. High-responding inhibitors of low or high titer typically require bypassing agents including activated pro-

Table 5. NHLBI Evidence-Based Guidelines for the Perioperative Use of vWF Concentrate*

	Type of Surgery	
Perioperative Period	**Major**	**Minor**
Loading dose (vWF:RCo IU/dl)	40–60 U/kg	30–60 U/kg
Maintenance dose	20–40 U/kg every 8–24 hr	20–40 U/kg every 12–48 hr
Monitoring	vWF:RCo and factor VIII trough and peak, at least daily	vWF:RCo and factor VIII trough and peak, at least once
Therapeutic goal	Trough vWF:RCo and factor VIII >50 IU/dl for 7–14 days	Trough vWF:RCo and factor VIII >50 IU/dl for 3–5 days
Safety parameter	Do not exceed vWF:RCo 200 IU/dl or factor VIII 250–300 IU/dl	Do not exceed vWF:RCo 200 IU/dl or factor VIII 250–300 IU/dl
Other	May alternate with DDAVP for latter part of treatment	May alternate with DDAVP for latter part of treatment

NHLBI, National Heart, Lung, and Blood Institute; vWF, von Willebrand factor; RCo, ristocetin cofactor; DDAVP, desmopressin.
*Modified from Nichols W; Expert Panel, and National Hemophilia Foundation. The diagnosis, evaluation and management of von Willebrand disease. Available at: http://www.nhlbi.nih.gov/guidelines/vwd/vwd.pdf. Accessed September 22, 2008.

thrombin complex concentrates, such as factor VIII inhibitor bypassing activity (factor VIII inhibitor bypassing activity)[39,42,68] or recombinant factor VIIa, alone or in combination with antifibrinolytic agents.[23,29,35,40–46,66,69–72] The recommended starting dose for factor VIII inhibitor bypassing activity is 50 to 100 μg/kg; for recombinant factor VIIa, 90 μg/kg. Additional doses should be administered perioperatively as needed.[24]

Thrombocytopenia

Thrombocytopenias are characterized by reduced levels of blood platelets, and can be inherited or acquired. Inherited thrombocytopenias are often attributed to defects in platelet size, whereas acquired forms typically result from an autoimmune condition, drug toxicity, or underlying disease. Normally, the level of platelets is maintained by the balance of production in the bone marrow and removal by the spleen. When this balance is disrupted, thrombocytopenia develops. Management of the condition depends on cause, but most thrombocytopenias are effectively managed by increasing the total number of platelets before surgery, usually by platelet transfusion, total plasma exchange, or immunosuppressant therapy.

In patients with idiopathic thrombocytopenia, platelet concentrate, red blood cells, fresh frozen plasma,[48,49] corticosteroids, and immunoglobulin G[73,74] have been used to control bleeding during surgery. Vinca alkaloids have been used successfully in idiopathic thrombocytopenia patients who fail to respond to corticosteroids.[74] Of note, acute heart failure may represent an extremely important clinical risk in patients with thrombotic thrombocytopenia who are undergoing surgery. Therefore, thrombotic thrombocytopenia patients with active-phase disease should undergo a preoperative cardiac workup, including an electrocardiogram, echocardiogram, determination of cardiac enzymes levels, and invasive arterial blood pressure monitoring.[75]

HYPERCOAGULABLE (THROMBOTIC) STATES

Hypercoagulable, or thrombotic, states are characterized by an increased risk of inappropriate or excessive blood clot formation. These conditions may be attributable to lifestyle risks, such as obesity, smoking, and inadequate exercise; prothrombotic states such as malignancy or pregnancy; or genetic risk factors. Table 6 lists genetic conditions associated with thrombosis formation.

In patients with hypercoagulation, the risk of venous thromboembolism is the greatest perioperative concern.[76–78] Several studies support preoperative testing for heritable thrombophilic defects to aid in the prediction of first-time and recurrent venous thromboembolism episodes. One study showed that venous thromboembolism recurrence rates were significantly increased in patients with hypercoagulable disorders.[76] In another study, patients who had thrombotic events after total hip arthroplasty were more likely than matched control patients to have hypercoagulable disorders, including the prothrombin gene mutation, protein C deficiency, or antithrombin III deficiency.[77] In addition, patients with polycythemia vera and essential thrombocythemia were five times as likely as patients without blood disorders to develop venous thromboembolism after major surgery.[78]

Table 6. Genetic Hypercoagulable (Thrombotic) States

Characteristic	Condition
Anticoagulant deficiency or defect	Antithrombin
	Protein C
	Protein S
Abnormal coagulant protein	Factor V Leiden
	Prothrombin gene mutation (20210)
	Dysfibrinogenemia
Increased procoagulant	Prothrombin factor VIII
Abnormal metabolism	Hyperhomocysteinemia

The literature includes case reports of plastic surgery patients who developed venous thromboembolism events that may have been related to the prothrombin gene mutation. One patient undergoing reconstruction for squamous cell carcinoma developed multiple thromboses, resulting in venous microvascular anastomotic failure.[12] Another developed pulmonary thromboembolism after a face lift, despite normal preoperative coagulation tests.[79] Consideration should be made, however, to one study reporting that venous thromboembolism recurrence rates were not related to the presence of heritable thrombophilia ($p = 0.187$).[80]

Use of oral contraceptives or hormone replacement therapy may further increase venous thromboembolism risk in patients with hypercoagulable disorders. For oral contraceptive use, significant associations of venous thromboembolism risk were found in women with factor V Leiden; deficiencies of antithrombin, protein C, or protein S; elevated levels of factor VIIIc; and factor V Leiden and prothrombin G20210A.[17,81] In addition, use of oral contraceptives in patients with factor V Leiden, the prothrombin gene mutation, or hyperhomocysteinemia may increase risk of re-

current thrombi formation.[76] A significant association was also found between factor V Leiden and use of hormone replacement therapy.[17] In general, it is up to the physician to decide whether to discontinue usage of hormone replacement therapy and oral contraceptives and to discuss this with his or her patients when discussing these risks.

In patients with hypercoagulable states, the use of prophylactic anticoagulants (e.g., heparin, warfarin) constitutes the primary management approach before, during, and after surgery (Fig. 2). Because anticoagulant therapy can lead to excessive bleeding, patients receiving such prophylaxis must be monitored closely. As mentioned previously, activated partial thromboplastin time, thrombin generation assays, and thromboelastographic assessment represent the spectrum of available monitoring modalities.[18–20,82] As with normal patients, postoperative graduated compression stockings, intermittent pneumatic compression devices, and early mobilization are used in hypercoagulable patients to prevent thrombosis.[77,83,84] For more information on prophylaxis, see Haeck et al., "Evidence-Based Patient Safety Advisory: Patient Selection and Procedures in Ambulatory Surgery," in this issue.

Additional therapeutic measures may include coagulation factor replacement (e.g., total volume exchange transfusions, plasmapheresis, or fresh frozen plasma)[19,85,86]; however, coagulation factor/blood product replacement therapy is not typically performed for patients with hypercoagulable disorders (as they are in hypocoagulable states) because of the inherent risks associated with blood products and the possibility of inhibitor formation.[87] Intravenous immunoglobulin G can also be used in the case of hypercoagulable states derived from autoimmune disorders.[87] Patients with myeloproliferative disorders that result in increased platelet counts can be treated with phlebotomy and/or cytoreductive therapy (e.g., hydroxyurea, anagrelide, and interferon).[78,88,89]

CONCLUSIONS

Patients with blood dyscrasias can safely undergo elective surgical procedures; however, because of their inherent bleeding and thrombotic risks, these patients may or may not be suitable candidates for outpatient surgery. The surgeon should conduct a thorough medical history, including family history, to identify any possible blood disorders, and refer patients for further coagulation testing as needed. It is recommended that the surgeon consult with a hematologist to determine whether a patient is suitable for outpatient surgery, to develop an appropriate plan for perioperative treatment/monitoring, and to ensure proper hemostasis and prevention of thrombi formation.

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Appendix A. Summary of Recommendations

Recommendation	Supporting Evidence	Grade
PATIENT SELECTION		
Medical history (see Appendix B)	8–17	B
It is recommended that the medical history include questions about:		
• Personal and family history of recurrent bleeding, bruising, or thrombosis		
• In women, a history of menorrhagia and/or pregnancy complications		
• Previous excessive posttraumatic or postsurgical bleeding		
• Use of antithrombotic drugs and other drugs/supplements that may affect coagulation (i.e., herbal remedies, HRT, oral contraceptives).		
PREOPERATIVE TESTING	8, 16, 17	B
• If bleeding and thrombosis history is negative, preoperative coagulation testing is not recommended.		
• If bleeding and thrombosis history is positive or there is a clear clinical indication (e.g., liver disease), preoperative coagulation testing is recommended.		
• For patients requiring coagulation tests, first-line clotting tests may include activated partial thromboplastin time and prothrombin time. Bleeding time may or may not be helpful, depending on severity of blood disorder.		
PERIOPERATIVE MANAGEMENT		
Hypocoagulable (hemorrhagic) states		
von Willebrand disease		
• Determine type of vWD: type 1, type 2 (A, B, M, or N), or type 3.	16, 52, 58	B
• Consider desmopressin as first approach to bleeding prophylaxis (most type 1; some type 2 patients; type 3 patients do not respond to desmopressin).	16, 25, 50, 52, 57, 58, 90	B
• For patients who do not respond to desmopressin (most type 2 and all type 3), consider replacement factors, vWF/VIII plasma-derived concentrates.	16, 27, 30, 32, 50, 57, 60, 90–98	B
• If patients have an inadequate response to factor concentrates, additional tests should be considered to test for inhibitors.	16, 57	B
• Adjunctive agents (e.g., antifibrinolytics, topical thrombin or fibrin) can be considered, as needed.	16, 26, 50, 57, 99	D
• Before surgery, the patient's response to therapies should be evaluated to ensure adequate hemostasis.	16, 52, 57, 58	B
Hemophilia		
• For patients with hemophilia A, consider desmopressin as first approach to bleeding prophylaxis (desmopressin is not effective in patients with hemophilia B).	56, 57	D
• For patients who do not respond to desmopressin, consider plasma-derived or recombinant replacement factor concentrates, factor VIII (hemophilia A), and factor IX (hemophilia B).	18, 29, 33–38, 56, 57, 64, 65, 72	B
• If patients have an inadequate response to factor concentrates, additional tests should be considered to test for inhibitors.	24, 56, 57	B
• Adjunctive agents (e.g., antifibrinolytics, topical thrombin or fibrin) can be considered, as needed.	24, 46, 56, 65, 66	D
• Before surgery, the patient's response to therapies should be evaluated to ensure adequate hemostasis.	56, 57	D

(*Continued*)

Appendix A. (*Continued*)

Recommendation	Supporting Evidence	Grade
Patients with inhibitors		
• For patients with low-responding inhibitors, consider high doses of recombinant factor concentrates, or plasma-derived concentrates if recombinant forms are unavailable.	24, 57	D
• For high-responding inhibitors, either low or high titer, consider recombinant factor VIII or factor IX, or bypass therapies, aPCC (e.g., FEIBA) or recombinant factor VIIa.	12, 23, 24, 39–46, 57, 66, 69–72, 100	B
• Adjunctive agents (e.g., antifibrinolytics, topical thrombin or fibrin) can be considered, as needed.	24, 44, 46, 57	D
• Before surgery, the patient's response to therapies should be evaluated to ensure adequate hemostasis.	24, 57	D
Thrombocytopenias		
• Increase platelet count preoperatively.	48	D
• Consider the use of corticosteroids or IgG.	73	D
• Consider vinca alkaloids for patients who do not respond to corticosteroids.	74	D
• Consider platelet concentrate, red blood cells, fresh frozen plasma, and plasmapheresis.	48, 49, 75	D
Hypercoagulable (thrombotic) states		
• Presence of thrombophilia disorders is considered a significant risk for the development of VTE.	12, 17, 77–79	B
• It is unclear whether presence of thrombophilia increases risk for *recurrent* VTE.	76, 80	C
• Prophylactic anticoagulants (e.g., heparin, warfarin, aspirin) should be considered before, during, and after surgery; medications should be adjusted as needed to prevent hemorrhage.	18–20, 82, 83	D
• Postoperative graduated compression stockings, intermittent pneumatic compression devices, and early mobilization are recommended after surgery to prevent thrombosis.	77, 83, 84	D
For more information on DVT/PE prophylaxis, consult "Evidence-Based Patient Safety Advisory: Patient Selection and Procedures in Ambulatory Surgery," in this issue.		

HRT, hormone replacement therapy; vWD, von Willebrand disease; vWF, von Willebrand factor; aPCC, activated prothrombin complex concentrates; FEIBA, factor VIII inhibitor bypassing activity; IgG, immunoglobulin G; VTE, venous thromboembolism; DVT, deep vein thrombosis; PE, pulmonary embolism.

APPENDIX B. SUGGESTED QUESTIONS FOR SCREENING PERSONS FOR A BLEEDING DISORDER*

*Adapted from Nichols W; Expert Panel, and National Hemophilia Foundation. The diagnosis, evaluation and management of von Willebrand disease. Available at: http://www.nhlbi.nih.gov/guidelines/vwd/vwd.pdf. Accessed September 22, 2008.

1. Have you or a blood relative ever needed medical attention for a bleeding problem or been told you have a bleeding disorder or problem:
   - During/after surgery?
   - With dental procedures, extractions?
   - With trauma?
   - During childbirth or for heavy menses?
   - Ever had bruises with lumps?
2. Do you have or have you ever had:
   - Liver or kidney disease, a blood or bone marrow disorder; a high or low platelet count?
3. Do you take aspirin, NSAIDs (provide common names), clopidogrel (Plavix; Bristol-Myers Squibb/Sanofi Pharmaceuticals Partnership, Bridgewater, N.J.), warfarin, heparin, or other drugs/supplements (i.e., other over-the-counter and/or herbal remedies)?

If any of the answers to questionquestions *and* obtain history of treatment and examine patient for signs of bleeding or underlying disease.

1. Do you have a blood relative who has a bleeding disorder, such as von Willebrand disease or hemophilia?
2. Have you ever had prolonged bleeding from trivial wounds, lasting more than 15 minutes or recurring spontaneously during the 7 days after the wound?
3. Have you ever had heavy, prolonged, or recurrent bleeding after surgical procedures, such as tonsillectomy?
4. Have you ever had bruising, with minimal or

no apparent trauma, especially if you could feel a lump under the bruise?
5. Have you ever had a spontaneous nosebleed that required more than 10 minutes to stop or needed medical attention?
6. Have you ever had heavy, prolonged, or recurrent bleeding after dental extractions that required medical attention?
7. Have you ever had blood in your stool, unexplained by a specific anatomical lesion (such as an ulcer in the stomach or a polyp in the colon), that required medical attention?
8. Have you ever had anemia requiring treatment or received blood transfusion?
9. For women, have you ever had heavy menses, characterized by the presence of clots greater than 1 inch in diameter and/or changing a pad or tampon more than hourly, or resulting in anemia or low iron level?

If the bleeding history is positive, initial laboratory tests and possible referral are recommended.