Exhibit 1

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Attorneys for Plaintiff Russell B. Toomey

UNITED STATES DISTRICT COURT

DISTRICT OF ARIZONA

Russell B. Toomey,

Plaintiff,

v.

State Of Arizona; Arizona Board of Regents, D/B/A University Of Arizona, a governmental body of the State of Arizona; **Ron Shoopman**, in his official capacity as chair of the Arizona Board Of Regents; **Larry Penley**, in his official capacity as Member of the Arizona Board of Regents; **Ram Krishna**, in his official capacity as Secretary of the Arizona Board of Regents; **Bill Ridenour**, in his official capacity as Treasurer of the Arizona Board of Regents; **Lyndel Manson**, in her official capacity as Member of the Arizona Board of Regents; **Karrin Taylor Robson**, in her official capacity as Member of the Arizona Board of Regents; **Jay Heiler**, in his official capacity as Member of the Arizona Board of Regents; **Fred Duval**, in his official capacity as Member of the Arizona Board of Regents; **Andy Tobin**, in his official capacity as Director of the Arizona Department of Administration; **Paul Shannon**, in his official capacity as Acting Assistant Director of the Benefits Services Division of the Arizona Department of Administration,

Defendants.

No. 4:19-cv-00035

EXPERT REPORT AND DECLARATION

EXPERT REPORT AND DECLARATION OF LOREN S. SCHECHTER, M.D.

I, Loren S. Schechter, M.D., declare as follows:

1. My name is Loren S. Schechter, M.D. I am a board-certified plastic surgeon. I specialize in performing gender confirming surgeries (including chest reconstruction surgeries, genital reconstruction surgeries, and other procedures to feminize or masculinize the body, as described in more detail below),[1] and I am a recognized expert in this field.

2. I have been retained by counsel for Plaintiff and the Class to provide expert testimony in the above-captioned lawsuit. I have personal knowledge of the matters stated in this expert report and declaration.

3. In preparing this expert report and declaration, I have reviewed a copy of the Amended Complaint and the self-funded health plan for Arizona employees attached to the Amended Complaint as Exhibit A (the "Arizona Plan").

4. My opinions contained in this expert report and declaration are based on: my clinical experience as a surgeon performing gender confirming surgeries for patients, including adolescents and young adults; my knowledge of the peer-reviewed research, including my own, regarding gender confirming surgeries, which reflects the clinical

[1] I refer to this family of procedures as gender-confirmation or gender-affirming surgeries because they are one of the therapeutic tools used to enable people to live in accordance with their gender identities. None of the myriad other labels I've heard for these procedures—sex-reassignment surgery, gender-reassignment surgery, and sex-change operation, to name a few—is as accurate when it comes to describing what is actually taking place. Most, if not all, the other names used for these procedures suggest that a person is making a choice to switch genders, or that there is a single "surgery" involved. From the hundreds of discussions I have had with patients over the years, nothing could be further from the truth. This is not about choice; it's about using one or more surgical procedures as therapeutic tools to improve a patient's functioning and enable people to live authentically.

advancements in these procedures and the corresponding growth in research related to their safety and effectiveness in treating gender dysphoria; my work as a contributing author of the World Professional Association for Transgender Health's (WPATH) *Standards of Care for the Health of Transsexual, Transgender, and Gender-Nonconforming People* (hereafter, "WPATH SOC"); and my work as an author and teacher of surgical techniques used in gender confirming surgeries. The materials I have relied upon in preparing this report are the same types of materials that experts in my field of study regularly rely upon when forming opinions on the subject.

5. Based on the foregoing, and as discussed further below, I offer the following expert opinion: The gender-confirming surgeries recognized as medically necessary under WPATH SOC are the same or similar to medically necessary surgical procedures covered by the Arizona Plan for other conditions.

BACKGROUND AND QUALIFICATIONS

6. The information provided regarding my professional background, experiences, publications, and presentations are detailed in my curriculum vitae. A true and correct copy of my CV is attached as Exhibit A.

7. I received my medical degree from the University of Chicago, Pritzker School of Medicine. I completed my residency and chief residency in plastic and reconstructive surgery and a fellowship in reconstructive microsurgery at the University of Chicago Hospitals.

8. I am currently a Clinical Professor of Surgery at the University of Illinois at Chicago and an attending surgeon at Rush University Medical Center in Chicago. I also maintain a clinical practice in plastic surgery in Illinois where I treat patients from around the world.

9. I have been performing gender confirming surgeries for over 20 years. For the past four or five years, I have been performing approximately 150 gender confirming

procedures every year. I have performed over 1,000 gender confirming surgeries during my medical career. Currently, approximately 90-95 percent of the patients in my clinical practice are transgender individuals seeking gender confirmation surgeries.

10. In 2014, there was a large increase in patients seeking gender-affirming surgery as both Medicare and many private health plans removed their coverage restrictions for those surgical treatments. I began to see more adolescent patients after 2014, and over the last three or four years, adolescent patients have become quite common. At this time, approximately 15-20 percent of the top surgeries I perform for transgender men are performed on patients under age 21. I have performed about 100-150 top surgeries for patients under age 21 to date, and that number continues to grow. Currently, such surgeries constitute a significant part of my practice.

11. I was a contributing author to the Seventh Version (current) of the WPATH SOC, which is attached as Exhibit B. In particular, I wrote the section focused on the relationship of the surgeon with the treating mental health professional and the physician prescribing hormone therapy. WPATH is in the midst of drafting the eighth version of the WPATH SOC. I am the co-lead on the surgical and postoperative care chapter in the eighth version.

12. The WPATH SOC provides clinical guidance for health professionals based on the best available science and expert professional consensus. The purpose of the WPATH SOC is to assist health providers in delivering medical care to transgender people to provide them with safe and effective treatment for gender dysphoria, in order to maximize their overall health, psychological well-being, and self-fulfillment.

13. In addition, I have written a number of peer-reviewed journal articles and chapters in professional textbooks about gender confirmation surgeries. In 2016, I published *Surgical Management of the Transgender Patient*, the first surgical atlas (a reference guide for surgeons on how to perform surgical procedures using safe, well-established techniques) dedicated to gender confirming surgeries. I published a second

book, *Gender Confirmation Surgery, Principles and Techniques for an Emerging Field*, earlier this year. A full and complete list of my publications is included in my CV.

14. I am a guest reviewer for several peer-reviewed medical journals, including the *Journal of Plastic and Reconstructive Surgery*, the *Journal of Reconstructive Microsurgery*, the *Journal of the American College of Plastic Surgeons,* the *Journal of Plastic and Reconstructive Surgery*, *The Journal of Plastic and Aesthetic Research*, and the *Journal of Sexual Medicine*. I also serve on the editorial board of both *Transgender Health* and the *International Journal of Transgender Health*. Each of these publications is a peer-reviewed medical journal. A full and complete list of my reviewerships and editorial roles is included in my CV.

15. I am actively involved in training other surgeons to perform gender confirming surgeries. In 2017, I started the surgical fellowship in gender surgery, now placed at Rush University Medical Center in Chicago. I am also the Medical Director of the Center for Gender Confirmation Surgery at Weiss Memorial Hospital. In addition, I am the site director for a fellowship in reconstructive urology and gender surgery at Weiss Memorial Hospital, under the auspices of the Department of Urology at the University of Illinois at Chicago. I also serve as a guest examiner for the American Board of Plastic Surgery.

16. I have given dozens of public addresses, seminars, and lectures on gender confirming surgery, including many through the American Society of Plastic Surgeons. I have also taught a number of courses through WPATH's Global Education Initiative, which provides training courses toward a member certification program in transgender health for practitioners around the world. In addition, in 2018, I co-directed the first live surgery course in gender confirming procedures at Mount Sinai Hospital in New York City. Also, in 2018, I presented on "Gender Dysphoria Across Development: Multidisciplinary Perspectives on the Evidence, Ethics, and Efficacy of Gender Transition, Gender Confirming Care in Adolescence: Evidence, Timing, Options, and

Outcomes," at the American Academy of Child and Adolescent Psychiatry's 65th Annual Meeting in Seattle. In 2019, I directed the inaugural Gender Affirming Breast, Chest, and Body Master Class for the American Society of Plastic Surgeons. This Master Class included a panel on surgeries for adolescents.

17. I am also a former member of the Board of Governors of the American College of Surgeons and a current member of the Board of Directors of WPATH. I am currently on the executive committee of WPATH and serve as Treasurer of the organization.

18. I am being compensated at an hourly rate of $400/hour plus expenses for my time spent preparing this declaration and providing local testimony (including deposition or providing hearing testimony by telephone or video-teleconference). My compensation does not depend on the outcome of this litigation, the opinions I express, or the testimony I may provide.

19. In the previous four years, I have given expert testimony by declaration on behalf of the plaintiff in *Edmo v. Idaho Dept. of Corrs.* in the U.S. District Court for the District of Idaho; for the plaintiffs in *Flack v. Wisconsin Dept. of Health Servs.* in the U.S. District Court for the Western District of Wisconsin; for the plaintiff in *Bruce v. South Dakota* in the U.S. District Court for the District of South Dakota; for the plaintiff in *Fletcher v. State of Alaska* in the U.S. District Court for the District of Alaska; for the plaintiff in *Lange v. Houston County Georgia* in the U.S. District Court for the Middle District of Georgia; for the plaintiff in *Being v. Crum* in the U.S. District Court for the District of Alaska; for the plaintiffs in *Boyden v. State of Wisconsin* in the U.S. District Court for the Western District of Wisconsin; for the defendant in *Royin Herrin v. Crane* in the Superior Court of California for the County of San Francisco; and for the plaintiff in *Paige v. Maercks* in Florida Circuit Court. I also provide deposition testimony in the *Bruce* and *Boyden* cases. I do not remember giving expert testimony at a trial or at a deposition in any other case in the last four years.

DISCUSSION OF EXPERT OPINIONS

20. Many transgender individuals experience gender dysphoria at some point in their lives. Gender dysphoria is defined as clinically significant distress caused by a discrepancy between a person's gender identity and that person's primary and/or secondary sexual characteristics.

21. Gender dysphoria is a serious medical condition recognized by the International Classification of Diseases-10 (ICD-10) and the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) published by the American Psychiatric Association. Individuals diagnosed with gender dysphoria have an intense and persistent discomfort with the primary and/or secondary sex characteristics of the sex they were assigned at birth.

22. The World Professional Association for Transgender Health (WPATH) *Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People* (WPATH SOC) are widely recognized guidelines for the clinical management of transgender individuals with gender dysphoria and have been adopted by many major associations of healthcare professionals in the United States. Surgeons who regularly treat individuals experiencing gender dysphoria, including myself, practice in accordance with the WPATH SOC.

23. As indicated in the WPATH SOC, safe and effective treatment options for gender dysphoria include hormone therapy to feminize or masculinize the body, and various surgical procedures to align a person's primary and/or secondary sex characteristics with the person's gender identity. (SOC at 9-10).

29. As indicated in the WPATH SOC, surgery is often the last and most considered of the treatment options. Evidence shows that while some transgender individuals do not require surgery, "for many others surgery is essential and medically necessary to alleviate their gender dysphoria. For the latter group, relief from gender dysphoria cannot be achieved without modification of their primary and/or secondary sex

characteristics to establish greater congruence with their gender identity." (SOC at 54-55).

30. For transgender men (men who were assigned female at birth and have a male gender identity), surgical treatment options consistent with the WPATH Standards of Care include, but are not limited to:

- Chest reconstruction surgery: double mastectomy (breast removal);
- Removal of internal sex organs: hysterectomy (removal of the uterus), salpingo-oophorectomy (removal of fallopian tubes and ovaries); and
- Genital reconstruction surgeries: phalloplasty (creation of neo-phallus and testicular implants).

31. For transgender women (women who were assigned male at birth and have a female gender identity), surgical treatment options consistent with the WPATH Standards of Care include, but are not limited to:

- Feminizing augmentation mammoplasty;
- Removal of internal sex organs: orchiectomy (removal of the testes); and
- Genital reconstruction surgeries: vaginoplasty (creation of a neo-vagina)

32. The medical community and insurance providers recognize a distinction between a surgery that is medically necessary and a cosmetic surgery, which generally is not. Medically necessary surgery is performed for medical conditions with the goal of either curing or preventing progression of medical conditions. Medically necessary surgery can also include reconstructive surgery to repair injuries or to address a congenital condition. No particular procedure is inherently cosmetic or inherently medically necessary; rather, the underlying diagnosis determines whether the procedure is considered cosmetic or medically necessary.

33. The surgical procedures listed above to treat gender dysphoria are similar to surgical procedures that are already recognized as medically necessary and apparently

covered by Arizona's self-funded plan to treat other medical conditions. These surgical procedures do not become more expensive simply because they are being performed for the purpose of treating gender dysphoria. When billing insurers for reimbursement, health care providers use Current Procedural Terminology (CPT) codes, which are developed and maintained by the American Medical Association. The same code or codes may apply to a particular procedure regardless of whether the procedure is performed on a transgender patient or a cisgender patient. For example, a hysterectomy/salpingo-oophorectomy may be performed for a cisgender woman to reduce her risk of uterine or ovarian cancer or for a transgender man with gender dysphoria. The same CPT codes are used for both procedures.

34. Removal of internal sex organs. Surgeons perform hysterectomies/salpingo-oophorectomies and orchiectomies to treat individuals with cancer, or a genetic predisposition to cancer. Surgeons may also perform surgery to remove internal sex organs resulting for congenital differences of sexual development such as Persistent Müllerian Duct Syndrome. Other reasons for performing hysterectomies include fibroids, prolapse, endometriosis, endometrial hyperplasia, and postpartum hemorrhage.

35. Chest surgeries. Surgeons perform mastectomies to treat individuals with cancer or a genetic predisposition to cancer. Following a mastectomy, or as a result of congenital conditions, trauma, or infections, surgeons perform reconstructive breast surgery. This surgery may entail insertion of a breast implant on the affected breast or surgery on the unaffected breast (i.e. breast implant, mastopexy (breast lift), reduction mammaplasty (breast reduction), or some combination thereof), for the purpose of creating symmetry.

36. Genital reconstruction surgeries. Surgeons perform procedures to reconstruct genitalia—including phalloplasties and vaginoplasties—following oncologic resection, traumatic injury, or infection. Surgeons also perform genital reconstruction

surgeries to correct congenital conditions such as hypospadias (a disorder in which the urinary opening is not in the typical location on the glans penis), epispadias (a condition where the urethra is not properly developed), exstrophy (where the bladder develops outside the fetus), or congenital absence of the vagina.

37. All of the foregoing surgical procedures appear to be eligible for coverage under Arizona's self-funded health plan when they are medically necessary for reasons other than gender dysphoria.

CONCLUSION

38. I may wish to supplement these opinions or the bases for them as a result of new scientific research or publications or in response to statements and issues that may arise in my area of expertise.

39. I may also supplement these opinions in response to information produced by Defendants in discovery or in response to Defendants' expert disclosures.

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

Executed this 23rd day of March, 2021 at Chicago, Illinois.

Loren S. Schechter, M.D.

Curriculum Vitae

NAME: **LOREN SLONE SCHECHTER, MD, FACS**

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WEB SITE: www.univplastics.com
www.plasticsurgery.org/md/DRLOREN.htm

BIRTHDATE: August 14, 1968
BIRTHPLACE: Galveston, Texas
MARITAL STATUS: Married
SPOUSE: Rebecca Brown Schechter, MD
CHILDREN: Owen Slone Schechter
Miles Slone Schechter

CERTIFICATION:

	The American Board of Plastic Surgery	2001
	Certificate Number 6271	
	Date Issued: September 2001	
	Maintenance of Certification:	2011

EDUCATION:

1986-1990	The University of Michigan	BS, 1990
1990-1994	The University of Chicago Pritzker School of Medicine	MD, 1994

POSTGRADUATE TRAINING:

Residency:	The University of Chicago Hospitals Coordinated Training Program in Plastic and Reconstructive Surgery	1994-1999
Chief Resident:	The University of Chicago Hospitals Section of Plastic and Reconstructive Surgery	1998-1999
Fellowship:	Reconstructive Microsurgery The University of Chicago Hospitals Section of Plastic and Reconstructive Surgery	1999-2000

TEACHING APPOINTMENT:
Clinical Professor of Surgery, The University of Illinois at Chicago

Adjunct Assistant Professor, Dept. of Surgery, Rush University Medical Center

Associate Professor, Physician Assistant Program, College of Health Professionals, Rosalind Franklin University

LICENSURE:

Illinois
Illinois Controlled Substance
DEA

STAFF APPOINTMENTS:

University of Illinois at Chicago Hospital
Rush University Medical Center
Advocate Lutheran General Hospital
Louis A. Weiss Memorial Hospital
Illinois Sports Medicine and Orthopedic Surgery Cente

HONORS AND AWARDS:

2020	The University of Minnesota Program in Human Sexuality, recipient of 50 Distinguished Sexual and Gender Health Revolutionaries
2017-2020	Castle Connolly Top Doctor (Chicago)
2017	Chicago Consumer Checkbook Top Doctor
2015	University of Minnesota Program in Human Sexuality Leadership Council
2014-2015	Rosalind Franklin University of Medicine and Science Chicago Medical School Honors and recognizes for dedication and commitment to teaching
2014	National Center for Lesbian Rights honored guest
2013	Illinois State Bar Association Award for Community Leadership
2010	Advocate Lutheran General 2009 Physicians Philanthropy Leadership Committee-Outstanding Leadership
2009	Advocate Lutheran General Hospital Value Leader (received for compassion)
1994	Doctor of Medicine with Honors
1994	University of Chicago Department of Surgery Award for Outstanding Performance in the Field of Surgery
1994	Catherine Dobson Prize for the Best Oral Presentation Given at the 48th Annual Senior Scientific Session in The Area of Clinical Investigation
1993	Alpha Omega Alpha
1991	University of Chicago National Institutes Of Health Summer Research Award
1990	Bachelor of Science with High Distinction

	And Honors in Economics
1990	James B. Angell Award for Academic Distinction
1989	Omicron Delta Epsilon-National Economic Honor Society
1988	College Honors Program Sophomore Honors Award For Academic Distinction
1988	Class Honors (Dean's List)

MEMBERSHIPS:

2018-	The American Association of Plastic Surgeons
2016-	The American Society for Gender Surgeons (founding member and president-elect)
2010-	World Society for Reconstructive Microsurgery
2005-	The University of Chicago Plastic Surgery Alumni Association
2005-	The Chicago Surgical Society
2004-	The American Society for Reconstructive Microsurgery
2003-	The American College of Surgeons
2002-	The American Society of Plastic Surgeons
2001-	Illinois Society of Plastic Surgeons (formerly, Chicago Society of Plastic Surgeons)
2001-	The American Society of Maxillofacial Surgeons
2001-	American Burn Association
2001-	Midwest Association of Plastic Surgeons
2001-	WPATH
1994-	The University of Chicago Surgical Society
1994-	The University of Chicago Alumni Association
1992-	American Medical Association
1992-	Illinois State Medical Society
1992-	Chicago Medical Society
1990-	The University of Michigan Alumni Association

CURRENT HOSPITAL COMMITTEES:

Director, Center for Gender Confirmation Surgery, Louis A. Weiss Memorial Hospital

PROFESSIONAL SOCIETY COMMITTEES:

WPATH Executive Committee

Treasurer, The World Professional Association for Transgender Health

Chair, Finance and Investment Committee, The American Society of Plastic Surgeons

WPATH 2020 Biennial Meeting Steering Committee

American Society of Breast Surgeons Research Committee, ASPS representative

American Board of Plastic Surgery, Guest Oral Board Examiner

WPATH Ethics Committee

American College of Radiology Committee on Appropriateness Criteria Transgender Breast Imaging Topic

American Society of Plastic Surgeons, Finance and Investment Committee

Board of Directors, at-large, The World Professional Association for Transgender Health

PlastyPac, Board of Governors

Medicare Carrier Advisory Committee

OTHER:

Guest Reviewer, Pain Management

Guest Reviewer, Plastic and Aesthetic Research

Guest Reviewer, European Medical Journal

Guest Reviewer, Open Forum Infectious Diseases

Guest Reviewer, The Journal of The American College of Surgeons

Guest Book Reviewer, Plastic and Reconstructive Surgery

Editorial Board, Transgender Health

Editorial Board (Associate Editor), International Journal of Transgenderism

Fellow of the Maliniac Circle

Guest Reviewer, Journal of Reconstructive Microsurgery

Guest Reviewer, Journal of Plastic and Reconstructive Surgery

Guest Reviewer, Journal of Sexual Medicine

Guest Editor, Clinics in Plastic Surgery, Transgender Surgery (Elsevier Publishing)

Guest Reviewer, The Journal of Plastic and Reconstructive Surgery

PREVIOUS EDITORIAL ROLE:

Guest Reviewer, EPlasty, online Journal

Module Editor for Patient Safety, Plastic Surgery Hyperguide

Editorial Advisory Board, Plastic Surgery Practice

Guest Reviewer, International Journal of Transgenderism

Guest Reviewer, Pediatrics

PREVIOUS ACADEMIC APPOINTMENT:

Visiting Clinical Professor in Surgery, The University of Illinois at Chicago

Chief, Division of Plastic and Reconstructive Surgery, Chicago Medical School, Rosalind Franklin University of Medicine and Science

Associate Professor of Surgery, The College of Health Professionals, Rosalind Franklin University

Clinical Associate in Surgery, The University of Chicago

PREVIOUS HOSPITAL COMMITTEES:

Division Director, Plastic Surgery, Lutheran General Hospital

Division Director, Plastic Surgery, St. Francis Hospital

Medical Staff Executive Committee, Secretary, Advocate Lutheran General Hospital

Credentials Committee, Lutheran General Hospital

Pharmacy and Therapeutics Committee Lutheran General Hospital

Operating Room Committee, St. Francis Hospital

Cancer Committee, Lutheran General Hospital
-Director of Quality Control

Risk and Safety Assessment Committee, Lutheran General Hospital

Nominating Committee, Rush North Shore Medical Center

Surgical Advisory Committee, Rush North Shore Medical Center

Section Director, Plastic Surgery, Rush North Shore Medical Center

PREVIOUS SOCIETY COMMITTEES:

PlastyPac, Chair, Board of Governors

Chair of the Metro Chicago District #2 Committee on Applicants, American College of Surgeons

American Society of Plastic Surgery, Health Policy Committee

American Society of Plastic Surgery, Patient Safety Committee

American Society of Plastic Surgeons, Coding and Payment Policy Committee

American Society of Plastic Surgeons, Practice Management Education Committee

Board of Governors, Governor-at-large, The American College of Surgeons

American College of Surgeons, International Relations Committee

Chair, Government Affairs Committee, American Society of Plastic Surgeons

President, The Metropolitan Chicago Chapter of The American College of Surgeons

2012 Nominating Committee, American Society of Plastic Surgeons

Program Committee, The World Society for Reconstructive Microsurgery, 2013 Bi-Annual Meeting

President, Illinois Society of Plastic Surgeons

Vice-President, The Illinois Society of Plastic Surgeons (formerly the Chicago Society of Plastic Surgery)

Vice-President, The Metropolitan Chapter of the American College of Surgeons

American Society of Plastic Surgery, Chairman, Patient Safety Committee

2006-2007 Pathways to Leadership, The American Society of Plastic Surgery

2005 & 2006 President, The University of Chicago Plastic Surgery Alumni Association

2003 Leadership Tomorrow Program, The American Society of Plastic Surgery

Senior Residents Mentoring Program, The American Society of Plastic Surgery

American Society of Maxillofacial Surgery, Education Committee

Alternate Councilor, Chicago Medical Society

American Society of Aesthetic Plastic Surgery, Electronic Communications Committee

American Society of Aesthetic Plastic Surgery, Intranet Steering Committee

American Society of Aesthetic Plastic Surgery, International Committee

Membership Coordinator, The Chicago Society of Plastic Surgeons
The Illinois State Medical Society, Governmental Affairs Council

The Illinois State Medical Society, Council on Economics

Chicago Medical Society, Physician Review Committee
-Subcomittee on Fee Mediation

Chairman, Chicago Medical Society, Healthcare Economics Committee

Secretary/Treasurer, The Metropolitan Chicago Chapter of the American College of Surgeons

Scientific Committee, 2007 XX Biennial Symposium WPATH

Local Organizing Committee 2007 WPATH

Secretary, The Chicago Society of Plastic Surgeons

Treasurer, The Chicago Society of Plastic Surgeons

Council Member, The Metropolitan Chicago Chapter of the American College of Surgeons

INTERNATIONAL MEDICAL SERVICE:

Northwest Medical Teams
Manos de Ayuda (Oaxaca, Mexico)

Hospital de Los Ninos (San Juan, Puerto Rico)

COMMUNITY SERVICE:

The University of Minnesota Presidents Club Chancellors Society

Board of Directors, Chicago Plastic Surgery Research Foundation

National Center for Gender Spectrum Health Advisory Council

PREVIOUS COMMUNITY SERVICE:

Board of Directors, Committee on Jewish Genetic Diseases, Jewish United Fund, Chicago, Illinois

Governing Council, Lutheran General Hospital, Park Ridge, Il

Lutheran General Hospital Development Council, Park Ridge, Il

Lutheran General Hospital Men's Association, Park Ridge, Il

Advisory Board, Committee on Jewish Genetic Diseases, Cancer Genetics Subcommittee, Jewish United Fund, Chicago, Illinois

Health Care Advisory Board, Congressman Mark Kirk, 10th Congressional District, Illinois

Major Gifts Committee, Saint Francis Hospital Development Council, Evanston, Il

Visiting Professor:

1. University of Utah, Division of Plastic Surgery, November 6-8, 2014.

2. Northwestern University, Division of Plastic Surgery, April 21-22, 2016.

3. The University of North Carolina, Division of Plastic Surgery, March 28-29, 2017

4. Georgetown University, Department of Plastic Surgery, May 17-18, 2017

5. The University of Basel, Basel, Switzerland, August 31-September 1, 2018

6. The Ochsner Health System, New Orleans, LA January 28-January 30, 2019

7. The University of Toronto, Toronto, Ontario, Canada, February 21-22, 2019

8. The University of Michigan, October3-4, 2019, Ann Arbor, MI,

Invited Discussant:

1. Department of Defense, Military service by people who are transgender, Invitation from Terry Adirim, M.D., M.P.H.Deputy Assistant Secretary of Defense for Health Services Policy & Oversight, The Pentagon, November 9, 2017

2. Aesthetic Surgery Journal, Invited Discussant May 7, 2019, Journal Club. "What is "Nonbinary" and What Do I need to Know? A

Primer for Surgeons Providing Chest Surgery for Transgender Patients."

Research Interests:

1. Role of Omental Stem Cells in Wound Healing (Grant: Tawani Foundation)

2. Robotic-Assisted Bilateral Prophylatic Nipple Sparing Mastectomy with Immediate Tissue Expander/Implant Reconstruction (Pending submission to the FDA for Investigational Device Exemption in association with Intuitive Surgical)

3. Transgender Health and Medicine Research Conference, National Institutes of Health, Bethesda, MD May 7-8, 2015

4. Uterine Transplantation, Rush University Medical Center

BIBLIOGRAPHY:

PEER REVIEWED ARTICLES:

1. E. Wall, D. A. Schoeller, **L. Schechter**, L.J. Gottlieb: Measured Total Energy Requirements of Adult Patients with Burns. *The Journal of Burn Care and Rehabilitation* 20:329, 1999.

2. David C. Cronin, II, **Loren Schechter**, Somchi Limrichramren, Charles G. Winans, Robert Lohman, and J. Michael Millis, Advances in Pediatric Liver Transplantation: Continuous Monitoring of Portal Venous and Hepatic Artery Flow with an Implantable Doppler Probe. *Transplantation 74(6):887-889, 2002.*

3. Robert F. Lohman, **Loren S. Schechter**, Lawrence S. Zachary, Solomon Aronson: Evaluation of Changes in Skeletal Muscle Blood Flow in the Dog with Contrast Ultrasonography Revisited: Has the Technique Been Useful, and Where are We Headed Now? *The Journal of Plastic and Reconstructive Surgery* 111(4):1477-1480, 2003.

4. Alvin B. Cohn, Eric Odessey, Francis Casper, **Loren S. Schechter**: Hereditary Gingival Fibromatosis: Aggressive Two-Stage Surgical Resection in Lieu of Traditional Therapy, *The Annals of Plastic Surgery Vol 57, Number 5, November 2006*.

5. Eric Odessey, Al Cohn, Kenneth Beaman, and **Loren Schechter**: Mucormycosis of the Maxillary Sinus: Extensive Destruction with an Indolent Presentation, *Surgical Infections*, Vol. 9, Number 1, 2008

6. Iris A. Seitz, MD, David Tojo, MD, **Loren S. Schechter**, MD Anatomy of a Medication Error: Inadvertent Intranasal Injection of Neosynephrine During Nasal Surgery – A Case Report and Review of The

Literature Plast Reconstr Surg. 2010 Mar;125(3):113e-4e. doi: 10.1097/PRS.0b013e3181cb68f9

7. Iris Seitz, MD Craig Williams, MD, Thomas Weidrich, MD, John Seiler, MD, Ginard Henry, MD, and **Loren S. Schechter, MD**: Omental Free Tissue Transfer for Coverage of Complex Upper Extremity Defects: The Forgotten Flap *(N Y). 2009 Dec;4(4):397-405. doi: 10.1007/s11552-009-9187-6. Epub 2009 Mar 25.*

8. Michael Salvino and **Loren S. Schechter**: Microvascular Reconstruction of Iatrogenic Femoral Artery Thrombus in an Infant: A Case Report and Review of the Literature ePlasty Volume 9 ISSN: 19357-5719, E-location ID: e20

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21. The Midwestern Association of Plastic Surgeons, April 23-24, Chicago, Il: "Modified Components Separation Technique for Two Massive Ventral Hernias"

22. The Midwestern Association of Plastic Surgeons, April 23-24, Chicago, Il: "Mucormycosis of the Head and Neck: A Fatal Disease?"

23. The 7th Annual Chicago Trauma Symposium, August 11-14, 2005, Chicago, Il "Management of Complex Injuries"

24. Current Concepts in Advanced Wound Healing: *A Practical Overview*, Rush North Shore Medical Center, Skokie, Il September 18, 2005 "From Flaps to Grafts"

25. Taizoon Baxamusa, M and Loren S.Schechter, MD, Abdominoplasty: Use in Reconstruction of the Mangled Upper Extremity, The American Association For Hand Surgery Annual Scientific Meeting, January 11-14, 2006, Tucson, Arizona.

26. The American Academy of Orthopedic Surgeons 2006 Annual Meeting, March 22-26, 2006, Chicago, Il "Methods of Patella-Femoral and Extensor Mechanism Reconstruction for Fracture and Disruption After Total Knee Arthroplasty"

27. Midwestern Association of Plastic Surgeons 44th Annual Meeting, April 29-30, 2006, Oak Brook, Illinois "Elective Abdominal Plastic Surgery Procedures Combined with Concomitant Intra-abdominal Operations: A Single Surgeon's Four Year Experience"

28. Midwestern Association of Plastic Surgeons 44th Annual Meeting, April 29-30, 2006, Oak Brook, Illinois "Hereditary Gingival Fibromatosis: Aggressive Two-Stage Surgical Resection Versus Traditional Therapy"

29. Midwestern Association of Plastic Surgeons 44th Annual Meeting, April 29-30, 2006, Oak Brook, Illinois "Abdominoplasty Graft & VAC Therapy: Two Useful Adjuncts in Full-Thickness Grafting of the Mangled Upper Extremity"

30. The American Association of Plastic Surgeons 85th Annual Meeting, May 6-9, 2006 Hilton Head, South Carolina "Excision of Giant Neurofibromas"

31. The 8th Annual Chicago Trauma Symposium, July 27-30, 2006, Chicago, Il "Management of Complex Injuries"

32. The American Society of Plastic Surgeons Annual Meeting, October 6-12, 2006, San Francisco, California "Excision of Giant Neurofibromas"

33. The American College of Surgeons Poster Presentation, October, 2006, Chicago, Il "Abdominoplasty: Use in Reconstruction of the Mangled Upper Extremity"

34. American Medical Association-RFS 3rd Annual Poster Symposium, November 10, Las Vegas, NV, 2006 "Abdominal Wall Reconstruction With Alloderm"

35. Advocate Injury Institute: "Trauma 2006: The Spectrum of Care), November 30-December 2, 2006, Lisle, Il, "Pit Bull Mauling: A Case Study"

36. The 9th Annual Chicago Trauma Symposium, August 10-12, 2007, Chicago, Il "Management of Complex Injuries"

37. The World Professional Association for Transgender Health (WPATH) 2007 XX Biennial Symposium, September 5-8. 2007, Chicago, Il Revision Vaginoplasty With Sigmoid Interposition: "A Reliable Solution for a Difficult Problem"

38. Metropolitan Chicago Chapter of the American College of Surgeons, 2008 Annual Meeting, March 15, 2008 "ER Call: Who's Job is it Anyway"

39. The 10th Annual Chicago Trauma Symposium, August 7-10, 2008, Chicago, Il "Management of Complex Injuries"

40. 23nd Annual Clinical Symposium on Advances in Skin & Wound Care: The Conference for Prevention and Healing October 26-30, 2008, Las Vegas, Nevada,poster presentation "Use of Dual Therapies Consisting of Negative Pressure Wound Therapy (NPWT) and Small Intestine Mucosa (SIS) on a Complex Degloving Injury With an Expose Achilles Tendon: A Case Report."

41. The American Society of Plastic Surgeons Annual Meeting, October 31-November 3, 2008, Chicago, Il "Panel: Fresh Faces, Real Cases"

42. The American Association for Hand Surgery Annual Meeting, January 7-13, 2009, Maui, Hawaii, poster session: "Omental Free Tissue Transfer for Coverage of Complex Upper Extremity and Hand Defects-The Forgotten Flap."

43. Plastic Surgery At The Red Sea Symposium, March 24-28, 2009 Eilat, Israel, "Omental Free Tissue Transfer for Coverage of Complex Upper Extremity and Hand Defects-The Forgotten Flap."

44. ASPS/IQUAM Transatlantic Innovations Meeting, April 4-7, 2009 Miason de la Chimie, Paris, France, "Advertising in Plastic Surgery?"

45. ASPS/IQUAM Transatlantic Innovations Meeting, April 4-7, 2009 Miason de la Chimie, Paris, France, "Cost-Effectiveness of Physician Extenders in Plastic Surgery"

46. Midwestern Association of Plastic Surgeons, 47th Annual Meeting, April 18-19, 2009, Chicago, Il, "Microvascular Reconstruction of Iatrogenic Femoral Artery Injury in a Neonate"

47. Midwestern Association of Plastic Surgeons, 47th Annual Meeting, April 18-19, 2009, Chicago, Il,"Two Birds, One Stone: Combining Abdominoplasty with Intra-Abdominal Procedures"

48. The 11th Annual Chicago Trauma Symposium, August 1, 2009, Chicago, Il "Management of Complex Injuries"

49. Societa Italiana Di Microchirurgia, XXIII Congresso Nazionale della Societa Italiana di Microchirurgia, First Atlanto-Pacific Microsurgery Conference, Modena, Italy, October 1-3, 2009, "Omental Free Tissue Transfer for Coverage of Complex Extremity Defects: The Forgotten Flap."

50. Societa Italiana Di Microchirurgia, XXIII Congresso Nazionale della Societa Italiana di Microchirurgia, First Atlanto-Pacific Microsurgery Conference, Modena, Italy, October 1-3, 2009, "Challenging Cases."

51. American Society of Plastic Surgeons Annual Meeting, October 23-27, 2009, Seattle, WA, "President's Panel: The Future of the Solo Practice-Can We, Should We Survive?"

52. The 12th Annual Chicago Trauma Symposium, August 5-8, 2010, Chicago, Il "Management of Complex Injuries"

53. Breast MRI to Define The Blood Supply to the Nipple-Areolar Complex. German Society of Plastic, Reconstructive and Aesthetic Surgery (DGPRAEC), Dresden, Germany, September 2010

54. Roundtable Discussion: Electronic Health Records-Implications for Plastic Surgeons, The American Society of Plastic Surgeons Annual Meeting, October 3, 2010, Toronto, CA

55. Breast MRI Helps Define the Blood Supply to the Nipple-Areolar Complex, The American Society of Plastic Surgeons Annual Meeting, October 3, 2010, Toronto, CA.

56. ASPS/ASPSN Joint Patient Safety Panel: Patient Selection and Managing Patient Expectations, The American Society of Plastic Surgeons Annual Meeting, October 4, 2010, Toronto, CA

57. Lunch and Learn: Prevention of VTE in Plastic Surgery Patients, The American Society of Plastic Surgeons Annual Meeting, October 5, 2010, Toronto, CA

58. Breast MRI Helps Define the Blood Supply to the Nipple-Areolar Complex, 16th Congress of The International Confederation for Plastic Reconstructive and Aesthetic Surgery, May 22-27, 2011, Vancouver, Canada

59. Breast MRI Helps Define the Blood Supply to the Nipple-Areolar Complex, The 6th Congress of The World Society for Reconstructive Microsurgery, WSRM 2011, 29 June-2 July, 2011, Helsinki, Finland

60. Applications of the Omentum for Limb Salvage: The Largest Reported Series, The 6th Congress of The World Society for Reconstructive Microsurgery, WSRM 2011, 29 June-2 July, 2011, Helsinki, Finland

61. Successful Tongue Replantation Following Auto-Amputation Using Supermicrosurgical Technique, Poster Session, The 6th Congress of The

World Society for Reconstructive Microsurgery, WSRM 2011, 29 June-2 July, 2011, Helsinki, Finland

62. The 13th Annual Chicago Trauma Symposium, August 25-28, 2011, Chicago, Il "Soft Tissue Defects-Getting Coverage"

63. WPATH: Pre-conference Symposium, September 24, 2011, Atlanta, GA "Surgical Options and Decision-Making"

64. American Society of Plastic Surgeons Annual Meeting, September 27, 2011, Denver, CO Closing Session Lunch and Learn: Pathways to Prevention-Avoiding Adverse Events, Part I: Patient Selection and Preventing Adverse Events in the Ambulatory Surgical Setting

65. American Society of Plastic Surgeons Annual Meeting, September 27, 2011, Denver, CO Closing Session Lunch and Learn: Pathways to Prevention-Avoiding Adverse Events, Part III: Preventing VTE

66. XXIV Congresso Nazionale della Societa Italiana di Microchirugia congiunto con la American Society for Reconstructive Microsurgery, October 20-22, 2011, Palermo, Sicily: 3 Step Approach to Lower Extremity Trauma

67. XXIV Congresso Nazionale della Societa Italiana Microchirugia congiunto con la American Society for Reconstructive Microsurgery, October 20-22, 2011, Palermo, Sicily: Applications of the Omentum for Limb Salvage: The Largest Reported Series

68. American Society for Reconstructive Microsurgery, Poster Presentation, January 14-17, 2012, Las Vegas, NV: Neonatal Limb Salvage: When Conservative Management is Surgical Intervention

69. The 14th Annual Chicago Trauma Symposium, August 2-5, 2012, Chicago, Il "Soft Tissue Defects-Getting Coverage"

70. The Annual Meeting of The American Society of Plastic Surgeons, October 25th-30, 2012, New Orleans, LA "Reimbursement in Breast Reconstruction"

71. The Annual Meeting of The American Society of Plastic Surgeons, October 25th-30, 2012, New Orleans, LA "Thriving in a New Economic Reality: Business Relationships and Integration in the Marketplace"

72. The 15th Annual Chicago Trauma Symposium, August 2-5, 2013, Chicago, Il "Soft Tissue Defects-Getting Coverage"

73. 2014 WPATH Symposium, Tansgender Health from Global Perspectives, February 14-18, 2014, "Short Scar Chest Surgery."

74. 2014 WPATH Symposium, Transgender Health from Global Perspectives, February 14-18, 2014, "Intestinal Vaginoplasty with Right and Left Colon."

75. 24th Annual Southern Comfort Conference, September 3-7, 2014, Atlanta, Georgia, "Gender Confirmation Surgery: State of the Art."

76. The 15th Annual Chicago Trauma Symposium, September 4-7, 2014, Chicago, Il "Soft Tissue Defects-Getting Coverage"

77. The Midwest Association of Plastic Surgeons, May 30, 2015, Chicago, Il "Gender Confirmation Surgery: A Single-Surgeon's Experience"

78. The Midwest Association of Plastic Surgeons, May 30, 2015, Chicago, Il, Moderator, Gender Reassignment.

79. the American Society of Plastic Surgeons 2015 Professional Liability Insurance and Patient Safety Committee Meeting, July 17, 2015, "Gender Confirmation Surgery."

80. The American Society of Plastic Surgeons, October 16-20, 2015, Boston, MA. From Fee-for-Service to Bundled Payments

81. The American Society of Plastic Surgeons, October 16-20, 2015, Boston, MA. Moderator, Transgender Surgery

82. The American Society of Plastic Surgeons, October 16-20, 2015, Boston, MA. Efficient Use of Physician Assistants in Plastic Surgery.

83. The American Society of Plastic Surgeons, October 16-20, 2015, Boston, MA. Patient Safety: Prevention of VTE

84. The World Professional Association for Transgender Health, Objective Quality Parameters for Gender Confirmation Surgery, June 18-22, 2016, Amsterdam, Netherlands

85. The World Professional Association for Transgender Health, Resident Education Curriculum for Gender Confirmation Surgery, June 18-22, 2016, Amsterdam, Netherlands

86. The World Professional Association for Transgender Health, Urologic Management of a Reconstructed Urethra(Poster session #195), June 18-22, 2016, Amsterdam, Netherlands

87. The World Professional Association for Transgender Health, Construction of a neovagina for male-to-female gender reassignment surgery using a modified intestinal vaginoplasty technique, poster session (Poster session #198), June 18-22, 2016, Amsterdam, Netherlands

88. Aesthetica Super Symposium, The American Society of Plastic Surgeons, Genital Aesthetics: What are we trying to achieve?, Washington, DC June 23-25, 2016

89. Aesthetica Super Symposium, The American Society of Plastic Surgeons, Female to Male Gender Reassignment, Washington, DC June 23-25, 2016

90. Aesthetica Super Symposium, The American Society of Plastic Surgeons, The journal of retractions, what I no longer do, Washington, DC June 23-25, 2016

91. Aesthetica Super Symposium, The American Society of Plastic Surgeons, The three minute drill, tips and tricks, Washington, DC June 23-25, 2016

92. Aesthetica Super Symposium, The American Society of Plastic Surgeons, Moderator, Mini master class: Male genital plastic surgery, Washington, DC June 23-25, 2016

93. The 16th Annual Chicago Trauma Symposium, August 18-21, 2016, Chicago, Il "Soft Tissue Defects-Getting Coverage"

94. USPATH Poster Session, Feb 2-5, 2017, Los Angeles, CA, Partial Flap Failure Five Weeks Following Radial Forearm Phalloplasty: Case Report and Review of the Literature

95. USPATH Poster Session, Feb 2-5, 2017, Los Angeles, CA, Urethroplasty for Stricture after Phalloplasty in Transmen Surgery for Urethral Stricture Disease after Radial Forearm Flap Phalloplasty-Management Options in Gender Confirmation Surgery

96. USPATH, Feb 2-5, 2017, Los Angeles, CA, Patient Evaluation and Chest Surgery in Transmen: A Pre-operative Classification

97. USPATH, Feb 2-5, 2017, Los Angeles, CA Single Stage Urethral Reconstruction in Flap Phalloplasty: Modification of Technique for Construction of Proximal Urethra

98. USPATH, Feb 2-5, 2017, Los Angeles, CA, Use of Bilayer Wound Matrix on Forearm Donor Site Following Phalloplasty

99. USPATH, Feb 2-5, 2017, Los Angeles, CA, Vaginoplasty: Surgical Techniques

100. USPATH, Feb 2-5, 2017, Los Angeles, CA, Positioning of a Penile Prosthesis with an Acellular Dermal Matrix Wrap following Radial Forearm Phalloplasty

101. USPATH, Feb 2-5, 2017, Los Angeles, CA, Principles for a Gender Surgery Program

102. USPATH, Feb 2-5, 2017, Los Angeles, CA, Construction of a Neovagina Using a Modified Intestinal Vaginoplasty Technique

103. The 18th Annual Chicago Orthopedic Symposium, July 6-9, 2017, Chicago, Il "Soft Tissue Defects-Getting Coverage"

104. The American Society of Plastic Surgeons Annual meeting, October 6-10, 2017, Orlando, FL, Moderator: Genital Surgery Trends for Women

105. The American Society of Plastic Surgeons Annual meeting, October 6-10, 2017, Orlando, FL, Adding Transgender Surgery to Your Practice, Moderator and Speaker

106. The American Society of Plastic Surgeons Annual meeting, October 6-10, 2017, Orlando, FL, Transbottom Surgery

107. 14th Congress of The European Federation of Societies for Microsurgery, Belgrade, May 5-8, 2018 A Novel Approach to IPP Implantation Post Phalloplasty: The Chicago Experience

108. 14th Congress of The European Federation of Societies for Microsurgery, Belgrade, May 5-8, 2018, A Novel Approach for Neovagina Configuration During Vaginoplasty for Gender Confirmation Surgery

109. 14th Congress of The European Federation of Societies for Microsurgery, Belgrade, May 5-8, 2018 Developlment of a Pelvic Floor Physical Therapy Protocol for Patients Undergoing Vaginoplasty for Gender Confirmation

110. 14th Congress of The European Federation of Societies for Microsurgery, Belgrade, May 5-8, 2018 Establishing Guidelines for Gender Confirmation Surgery: The Perioperative Risk of Asymptomatic Deep Venous Thrombosis for Vaginoplasty

111. The 19th Annual Chicago Trauma Symposium, August 16-19, 2018, Chicago, Il "Soft Tissue Defects-Getting Coverage"

112. Midwest LGBTQ Health Symposium, September 14-15, 2018, Chicago, Il "Quality Parameters in Gender Confirmation Surgery"

113. 25th WPATH Symposium, November 2-6, 2018, Buenos Aires, Argentina, Poster Session, Proposed Guidelines for Medical Tattoo Following Phalloplasty; An Interdisciplinary Approach

114. 25th WPATH Symposium, November 2-6, 2018, Buenos Aires, Argentina, Establishment of the First Gender Confirmation Surgery Fellowship

115. 25th WPATH Symposium, November 2-6, 2018, Buenos Aires, Argentina, ISSM Lecture, The Importance of Surgical Training

116. 25th WPATH Symposium, November 2-6, 2018, Buenos Aires, Argentina, Tracking Patient-Reported Outcomes in Gender Confirmation Surgery

117. "Theorizing the Phantom Penis," The Psychotherapy Center for Gender and Sexuality's 6th Biannual Conference, Transformations, March 29-March 30, 2019, NY, NY

INSTRUCTIONAL COURSES:

1. Emory University and WPATH: Contemporary Management of Transgender Patients: Surgical Options and Decision-Making, September 5, 2007 Chicago, Il

2. Craniomaxillofacial Trauma Surgery: An Interdisciplinary Approach, February 16-17, 2008, Burr Ridge, Il

3. Societa Italiana Di Microchirurgia, XXIII Congresso Nazionale della Societa Italiana di Microchirurgia, First Atlanto-Pacific Microsurgery Conference, Modena, Italy, October 1-3, 2009, Moderator: Free Papers, Lower Extremity

4. American Society of Plastic Surgeons Annual Meeting, October 23-27, 2009, Seattle, WA, Moderator: ASPS/ASPSN Patient Panel: Effective Communication-A Key to Patient Safety and Prevention of Malpractice Claims

5. American Society of Plastic Surgeons Annual Meeting, October 23-27, 2009, Seattle, WA, Instructional Course: Strategies to Identify and Prevent Errors and Near Misses in Your Practice

6. American Society of Plastic Surgeons Annual Meeting, October 23-27, 2009, Seattle, WA, Roundtable Discussion: Electronic Health Records-Implications for Plastic Surgeons

7. 10th Congress of The European Federation of Societies for Microsurgery, May 2—22, 2010, Genoa, Italy, "The Mangled Lower Extremities: An Algorithm for Soft Tissue Reconstruction."

8. Mulitspecialty Course for Operating Room Personnel-Craniomaxillofacial, Orthopaedics, and Spine, A Team Approach, AO North American, June 26-27, 2010, The Westin Lombard Yorktown Center.

9. Management of Emergency Cases in the Operating Room, The American Society of Plastic Surgeons Annual Meeting, October 4, 2010, Toronto, CA.

10. Surgical Approaches and Techniques in Craniomaxillofacial Trauma, November 6, 2010, Burr Ridge, Il.

11. The Business of Reconstructive Microsurgery: Maximizing Economic value (Chair)The American Society for Reconstructive Microsurgery, January 14-17, 2012, Las Vegas, Nevada.

12. Strategies to Identify and Prevent Errors and Near Misses in Your Practice, The Annual Meeting of The American Society of Plastic Surgeons, October 25th-30th, 2012, New Orleans, LA

13. Strategies to Identify and Prevent Errors and Near Misses in Your Practice, The Annual Meeting of The American Society of Plastic Surgeons, October 11th-15th, 2013, San Diego, CA

14. Mythbusters: Microsurgical Breast Reconstruction in Private Practice, The Annual Meeting of The American Society of Plastic Surgeons, October 11th-15th, 2013, San Diego, CA

15. Minimizing Complications in Perioperative Care, The American Society for Reconstructive Microsurgery, January 11-14, 2014, Kauai, Hawaii

16. Genitourinary and Perineal Reconstruction, The American Society for Reconstructive Microsurgery, January 11-14, 2014, Kauai, Hawaii

17. Transgender Breast Surgery, The American Society of Plastic Surgeons, October 16-20, 2015, Boston, MA

18. Gender Confirmation Surgery, The School of the Art Institute (recipient of American College Health Fund's Gallagher Koster Innovative Practices in College Health Award), October 27, 2015, Chicago, Il

19. Transgender Health: Best Practices in Medical and Mental Health Care. A WPATH Certified Training Course, November 5-7, 2015, Chicago, Il Overview of Surgical Treatment Options

20. Transgender Health: Best Practices in Medical and Mental Health Care. A WPATH Certified Training Course, November 5-7, 2015 Chicago, Il Surgical Procedures

21. Transgender Health: Best Practices in Medical and Mental Health Care. A WPATH Certified Training Course, November 5-7, 2015, Chicago, Il Surgical Complications

22. Transgender Health: Best Practices in Medical and Mental Health Care. A WPATH Certified Training Course, November 5-7, 2015, Chicago, Il Post-operative Care

23. Transgender Health: Best Practices in Medical and Mental Health Care. A WPATH Certified Training Course, November 5-7, 2015, Chicago, Il Case Discussions: The Multidisciplinary Team

24. Transgender Health: Best Practices in Medical and Mental Health Care. A WPATH Certified Training Course, January 20-23,2016, Atlanta, GA Overview of Surgical Treatment Options

25. Transgender Health: Best Practices in Medical and Mental Health Care. A WPATH Certified Training Course, January 20-23, 2016, Atlanta, GA Surgical Treatment Options

26. Transgender Health: Best Practices in Medical and Mental Health Care. A WPATH Certified Training Course, March 30-April 1, 2016, Springfield, MO, Surgical Treatment Options.

27. Transgender Health: Best Practices in Medical and Mental Health Care. A WPATH Certified Training Course, March 30-April 1, 2016, Springfield, MO, Multi-disciplinary Case Discussion.

28. Introduction to Transgender Surgery, ASPS Breast Surgery and Body Contouring Symposium, Santa Fe, NM, August 25-27, 2016

29. Transgender Health: Best Practices in Medical and Mental Health Care. A WPATH Global Education Initiative Advanced Training Course, September 28, 2016, Ft. Lauderdale, FL.

30. Cirugias de Confirmacion de Sexo Paso a Paso, XXXV Congreso Confederacion Americana de Urologia (CAU), Panama City, Panama, October 4-8, 2016.

31. Transgender Health: Best Practices in Medical and Mental Health Care. A WPATH Global Education Initiative Advanced Training Course, December 3, 2016, Arlington, VA.

32. PSEN (sponsored by ASPS and endorsed by WPATH), Transgender 101 for Surgeons, January 2017-March 2017

33. Surgical Anatomy and Surgical Approaches to M-to-F Genital Gender Affirming Surgery and the Management of the Patient Before, During and After Surgery: A Human Cadaver Based Course, Orange County, CA, Feb. 1, 2017

34. Gender Confirmation Surgery, ALAPP, 2 Congreso Internacional de la Asociacion Latinoamericana de Piso Pelvico, Sao Paulo, Brasil, 9-11 de marzo de 2017

35. Transgender Health: Best Practices in Medical and Mental Health Care. A WPATH Global Education Initiative Foundations Training Course, Overview of Surgical Treatment, March 31-April 2, 2017, Minneapolis Minnesota.

36. Transgender Health: Best Practices in Medical and Mental Health Care. A WPATH Global Education Initiative Foundations Training Course, The Multi-Disciplinary Team Case Discussions, March 31-April 2, 2017, Minneapolis Minnesota.

37. Transfeminine Cadaver Course, WPATH, May 19-20, 2017, Chicago, Il

38. Transgender/Penile Reconstruction-Penile Reconstruction: Radial Forearm Flap Vs. Anterolateral Thigh Flap, Moderator and Presenter, The World Society for Reconstructive Microsurgery, June 14-17, 2017, Seoul, Korea

39. Primer of Transgender Breast Surgery, ASPS Breast Surgery and Body Contouring Symposium, San Diego, CA, August 10-12, 2017

40. Confirmation Surgery in Gender Dysphoria: current state and future developments, International Continence Society, Florence, Italy, September 12-15, 2017

41. The American Society of Plastic Surgeons Annual meeting, October 6-10, 2017, Orlando, FL, ASPS/WPATH Joint Session, Session Planner and Moderator

42.Transgender Health: Best Practices in Medical and Mental Health Care. A WPATH Global Education Initiative Foundations Training Course: Overview of Surgical Treatment, Columbus, OH, October 20-21, 2017

43. Transgender Health: Best Practices in Medical and Mental Health Care. A WPATH Global Education Initiative Advanced Training Course: Medical Care in the Perioperative Period, Aftercare: Identifying Potential Complications, Columbus, OH, October 20-21, 2017

44. Webinar: Gender Affirming Surgeries 101: Explore The Latest Topics in Gender Affirmation Surgery, PSEN, April 18, 2018

45. Course Director: MT. Sinai/WPATH Live Surgery Training Course for Gender Affirmation Procedures, April 26-28, 2018, New York, NY

46. Philadelphia Trans Wellness Conference, Perioperative Care of the Transgender Woman Undergoing Vaginoplasty (Workshop), Philadelphia, PA, August 3, 2018

47. Philadelphia Trans Wellness Conference, Gender Confirmation Surgery (Workshop), Philadelphia, PA, August 3, 2018

48. Gender Confirmation Surgery, 2018 Oral and Written Board Preparation Course, The American Society of Plastic Surgeons, August 16-18, 2018, Rosemont, Il

49. Confirmation Surgery in Gender Dysphoria: Current State and Future Developments, The International Continence Society, Philadelphia, PA August 28, 2018

50. WPATH Global Education Initiative, Foundations Training Course, "Overview of Surgical Treatment," Cincinnati, OH, September 14-15, 2018

51. WPATH Global Education Initiative, Foundations Training Course, "The Multi-Disciplinary Team: Case Discussions," Cincinnati, OH, September 14-15, 2018

52. WPATH Global Education Initiative, Advanced Training Course, "Medical Care in the Perioperative Period After Care: Identifying Potential Complications," Cincinnati, OH, September 14-15, 2018

53. 25th WPATH Symposium, Surgeons Conference, November 1, 2018, Buenos Aires, Argentina, Moderator

54. 25th WPATH Symposium, November 2-6, 2018, Buenos Aires, Argentina, Global Education Initiative (GEI): Surgery and Ethics

55. WPATH GEI: Best Practices in Medical and Mental Health Care, Foundations in Surgery, New Orleans, March 22, 2019

56. WPATH GEI: Best Practices in Medical and Mental Health Care, Advanced Surgery, New Orleans, March 22, 2019

57. Program Chair: ASPS/WPATH GEI Inaugural Gender-Affirming Breast, Chest, and Body Master Class, Miami, Fl, July 20, 2019

58. Overview of Surgical Management and The Standards of Care (WPATH, v. 7) ASPS/WPATH GEI Inaugural Gender-Affirming Breast, Chest, and Body Master Class, Miami, Fl, July 20, 2019

59. Program Director, Gender Affirming Breast,Chest, and Body Master Class, The American Society of Plastic Surgeons, Miami, Fl, July 20, 2019

60. Gender Confirmation Surgery, The American Society of Plastic Surgeons Oral and Written Board Preparation Course, August 15, 2019, Rosemont, Il

61. Upper Surgeries (chest surgery & breast augmentation), WPATH, Global Education Initiative, September 4-5, 2019, Washington, DC

62. Preparing for Upper Surgeries-Case Based (chest surgery & breast augmentation), WPATH, Global Education Initiative, September 4-5, 2019, Washington, DC

63. Preparing for Feminizing Lower Surgeries-Case Based (vaginoplasty), WPATH, Global Education Initiative, September 4-5, 2019, Washington, DC

64. Lower Surgeries-Masculinizing (phalloplasty & metoidioplasty), WPATH, Global Education Initiative, September 4-5, 2019, Washington, DC

65. Preparing for Masculinizing Lower Surgeries-Case Based (phalloplasty & metoidioplasty), WPATH, Global Education Initiative, September 4-5, 2019, Washington, DC

66. Panel Discussion about Ethics in Surgery and Interdisciplinary Care, WPATH, Global Education Initiative, September 4-5, 2019, Washington, DC

67. Discussion about Ethics and Tensions in Child and Adolescent Care, WPATH, Global Education Initiative, September 4-5, 2019, Washington, DC

68. Transgender Health: Best Practices in Medical and Mental Health Care Foundation Training Courses, Hanoi, Viet Nam, Jan 14-17, 2020 (Foundations in Surgery, Advanced Medical-surgery and complicated case studies), Planning & Documentation (upper surgeries-chest surgery and breast augmentation, preparing for upper surgeries-case based (chest surgery and breast augmentation), lower surgeries (feminizing-vaginoplasty), preparing for feminizing lower surgeries-case based, lower surgeries-masculinizing (phalloplasty and metoidioplasty), preparing for masculinizing lower surgeries-case-based (phalloplasty and metoidioplasty), Ethics-panel discussion about ethics in surgery and interdisciplinary care)

69. WPATH GEI Panel Cases Discussion, via Webinar, May 29, 30, 31, 2020

70. WPATH GEI: Illinois Dept. of Corrections, Foundations in Surgery, November 20, 2020

71. WPATH GEI: Illinois Dept. of Corrections, Ethical Considerations in Transgender Healthcare, November 20, 2020

72. WPATH GEI: Illinois Dept. of Corrections, Foundations in Surgery, February 26, 2021

73. WPATH GEI: Illinois Dept. of Corrections, Ethical Considerations in Transgender Healthcare, February 26, 2021.

74. Current Concepts in Gender Affirming Surgery for Women in Transition, March 11-12, 2021 (online event), Moderator, Transgender Health.

SYMPOSIA:

1. Program Director, 2011 Chicago Breast Symposium, October 15, 2011, The Chicago Plastic Surgery Research Foundation and The Chicago Medical School at Rosalind Franklin University, North Chicago, IL,

2. Fundamentals of Evidence-Based Medicine & How to Incorporate it Into Your Practice, Challenging Complications in Plastic Surgery: Successful Management Strategies, The American Society of Plastic Surgeons, July 13-14, 2012 Washington, DC

3. Understanding Outcome Measures in Breast & Body Contouring Surgery, Challenging Complications in Plastic Surgery: Successful Management Strategies, The American Society of Plastic Surgeons, July 13-14, 2012 Washington, DC

4. Benchmarking Complications: What We Know About Body Contouring Complication Rates from Established Databases, Challenging Complications in Plastic Surgery: Successful Management Strategies, The American Society of Plastic Surgeons, July 13-14, 2012 Washington, DC

5. Special Lecture: VTE Prophylaxis for Plastic Surgery in 2011, Challenging Complications in Plastic Surgery: Successful Management Strategies, The American Society of Plastic Surgeons, July 13-14, 2012 Washington, DC

6. Nipple Sparing Mastectomy: Unexpected Outcomes, Challenging Complications in Plastic Surgery: Successful Management Strategies, The American Society of Plastic Surgeons, July 13-14, 2012 Washington, DC

7. Program Director, 2011 Chicago Breast Symposium, October 13-14, 2012, The Chicago Plastic Surgery Research Foundation and The Chicago Medical School at Rosalind Franklin University, North Chicago, Il

8. Practice Strategies in a Changing Healthcare Environment, Moderator, Midwestern Association of Plastic Surgeons, April 27-28, 2013, Chicago, Il

9. Moderator: Breast Scientific Paper Session, The Annual Meeting of The American Society of Plastic Surgery, October 12, 2014, Chicago, Il.

10. Moderator: The World Professional Association for Transgender Health, Tuesday, June 21, Surgical Session (0945-1045), June 18-22, 2016, Amsterdam, Netherlands

11. Course Director: Transmale Genital Surgery: WPATH Gender Education Initiative, October 21-22, 2016 Chicago, Il

12. Co-Chair and Moderator: Surgeon's Only Session, USPATH, Los Angeles, CA, Feb. 2, 2017

13. Vascular Anastomosis: Options for Lengthening Vascular Pedicle, Surgeon's Only Session, USPATH, Los Angeles, CA, Feb. 2, 2017

14. Transgender Healthcare Mini-Symposium, Chicago Medical School of Rosalind Franklin University, North Chicago, Il March 10, 2017.

15. Moderator: Penile Transplant: Genito-urinary trauma/penile cancer, The European Association of Urologists, Meeting of the EAU Section of Genito-Urinary Reconstructive Surgeons (ESGURS), London, United Kingdom, March 23-26, 2017

16: 25th WPATH Symposium, November 2-6, 2018, Buenos Aires, Argentina, Mini-Symposium: A Comprehensive Approach to Gender Confirming Surgery

17. Program Director, 2nd Annual Live Surgery Conference for Gender Affirmation Procedures, Ichan School of Medicine at Mt. Sinai, NY, NY February 28, 2019-March 2, 2019.

18. Moderator, "Genital Reassignment for Adolescents: Considerations and Conundrums," Discussions on gender affirmation: surgery and beyond, Dignity Health Saint Francis Memorial Hospital and WPATH GEI, San Francisco, CA, May 30-June 1, 2019

19. Moderator, "Reconstructive Urology and Genitourinary Options in Gender Affirming Surgery," Discussions on gender affirmation: surgery and beyond, Dignity Health Saint Francis Memorial Hospital and WPATH GEI, San Francisco, CA, May 30-June 1, 2019

20. Moderator, "Complications in Masculinizing Genital Reconstruction Surgery," Dignity Health Saint Francis Memorial Hospital and WPATH GEI, San Francisco, CA, May 30-June 1, 2019

21. Moderator, "Preparing for Surgery and Recovery," Dignity Health Saint Francis Memorial Hospital and WPATH GEI, San Francisco, CA, May 30-June 1, 2019

22. Discussant, "WPATH Standards of Care Version 8 Preview," Dignity Health Saint Francis Memorial Hospital and WPATH GEI, San Francisco, CA, May 30-June 1, 2019

23. Program Coordinator, Surgeon's Only Course, USPATH, September 5, 2019, Washington, DC

24. Master Series in Transgender Surgery 2020: Vaginoplasty and Top Surgery, course co-director, Mayo Clinic, Rochester, MN, August 7-8, 2020

25. WPATH 2020 Surgeons' Program, Co-Chair, November 6-7, 2020, Virtual Symposium (due to covid-19 cancellation of Hong Kong meeting)

FACULTY SPONSORED RESEARCH:

1. Societa Italiana Di Microchirurgia, XXIII Congresso Nazionale della Societa Italiana di Microchirurgia, First Atlanto-Pacific Microsurgery Conference, Modena, Italy, October 1-3, 2009, "Free Tissue Transfer in the Treatment of Zygomycosis." Presented by Michelle Roughton, MD

2. Hines/North Chicago VA Research Day, Edward Hines, Jr., VA Hospital, Maywood, Il, April 29, 2010, "Breast MRI Helps to Define the Blood Supply to the Nipple-Areolar Complex." Presented by Iris A. Seitz, MD, PhD.

3. Advocate Research Forum, Advocate Lutheran General Hospital, May 5, 2010, "Breast MRI Helps to Define the Blood Supply to the Nipple-Areolar Complex." Presented by Iris A. Seitz, MD, PhD.

4. Advocate Research Forum, Advocate Lutheran General Hospital, May 5, 2010, "Achieving Soft Tissue Coverage of Complex Upper and Lower Extremity Defects with Omental Free Tissue Transfer." Presented by Iris A. Seitz, MD, PhD.

5. Advocate Research Forum, Advocate Lutheran General Hospital, May 5, 2010, "Facilitating Harvest of the Serratus Fascial Flap with Ultrasonic Dissection." Presented by Iris A. Seitz, MD, PhD.

6. Advocate Research Forum, Advocate Lutheran General Hospital, May 5, 2010,"Patient Safety: Abdominoplasty and Intra-Abdominal Procedures." Presented by Michelle Roughton, MD

7. The Midwestern Association of Plastic Surgeons, 49th Annual Scientific Meeting, May 15th, 2010, "Breast MRI Helps Define The Blood Supply to the Nipple-Areolar Complex." Presented by Iris A. Seitz, MD, PhD.

8. Jonathan M. Hagedorn, BA, **Loren S. Schechter**, MD, FACS, Dr. Manoj R. Shah, MD, FACS, Matthew L. Jimenez, MD, Justine Lee, MD, PhD, Varun Shah. Re-examining the Indications for Limb Salvage, 2011 All School Research Consortium at Rosalind Franklin University. Chicago Medical School of Rosalind Franklin University, 3/16/11.

9. Jonathan Bank, MD, Lucio A. Pavone, MD, Iris A. Seitz, Michelle C. Roughton, MD, Loren S. Schechter, MD Deep Inferior Epigastric Perforator Flap for Breast Reconstruction after Abdominoplasty The Midwestern Association of Plastic Surgeons, 51st Annual Educational Meeting, April 21-22, 2012, Northwestern Memorial Hospital, Chicago, Illinois

10. Samuel Lake, Iris A. Seitz, MD, Phd, Loren S. Schechter, MD, Daniel Peterson, Phd Omentum and Subcutaneous Fat Derived Cell Populations Contain hMSCs Comparable to Bone Marrow-Derived hMSCsFirst Place, Rosalind Franklin University Summer Research Poster Session

11. J. Siwinski, MS II, Iris A. Seitz, MD PhD, Dana Rioux Forker, MD, Lucio A. Pavone, MD, Loren S Schechter, MD FACS. Upper and Lower Limb Salvage With Omental Free Flaps: A Long-Term Functional Outcome Analysis. Annual Dr. Kenneth A. Suarez Research Day, Midwestern University, Downers Grove, IL, May 2014

12. Whitehead DM, Kocjancic E, Iacovelli V, Morgantini LA, **Schechter LS**. A Case Report: Penile Prosthesis With an Alloderm Wrap Positioned After Radial Forearm Phalloplasty. Poster session presented at: American Society for Reconstructive Microsurgery Annual Meeting, 2018 Jan 13-16; Phoenix, AZ.

13. Whitehead DM, Kocjancic E, Iacovelli V, Morgantini LA, **Schechter LS**. An Innovative Technique: Single Stage Urethral Reconstruction in Female-to-Male Patients. Poster session presented at: American Society for Reconstructive Microsurgery Annual Meeting, 2018 Jan 13-16; Phoenix, AZ.

14. Whitehead, DM Inflatable Penile Prosthesis Implantation Post Phalloplasty: Surgical Technique, Challenges, and Outcomes, MAPS 2018 Annual Scientific Meeting, April 14, 2018, Chicago, Il

15. Whitehead, DM, Inverted Penile Skin With Scrotal Graft And Omission of Sacrospinal Fixation: Our Novel Vaginoplasty Technique MAPS 2018 Annual Scientific Meeting, April 14, 2018, Chicago, Il

16. S. Marecik, J. Singh. **L. Schechter**, M. Abdulhai, K. Kochar, J. Park, Robotic Repair of a Recto-Neovaginal Fistula in a Transgender

Patient Utilizing Intestinal Vaginoplasty, The American College of Surgeons Clinical Congress 2020, October 7, 20

Keynote Address:

1. University of Utah, Gender Confirmation Surgery, Transgender Provider Summit, November 8, 2014

INVITED LECTURES:

1. Management of Soft Tissue Injuries of the Face, Grand Rounds, Emergency Medicine, The University of Chicago, August, 1999

2. Case Report: Excision of a Giant Neurofibroma, Operating Room Staff Lecture Series, Continuing Education Series, St. Francis Hospital, Evanston, Il March 2000

3. Wounds, Lincolnwood Family Practice, Lincolnwood, Il April 2000

4. The Junior Attending, Grand Rounds, Plastic and Reconstructive Surgery, The University of Chicago, June 2000

5. Case Report: Excision of a Giant Neurofibroma, Department of Medicine Grand Rounds, St. Francis Hospital, Evanston, Il June 2000

6. Facial Trauma, Resurrection Medical Center Emergency Medicine Residency, September 2000

7. Plastic Surgery of the Breast and Abdomen, Grand Rounds, Dept. of Obstetrics and Gynecology, Evanston Hospital, September, 2000

8. Change of Face; Is Cosmetic Surgery for You?, Adult Education Series, Rush North Shore Medical Center, October, 2000

9. Reconstructive Surgery of the Breast, Professional Lecture Series on Breast Cancer, St. Francis Hospital, October, 2000

10. Plastic Surgery of the Breast and Abdomen, Grand Rounds, Dept. of Obstetrics and Gynecology, Lutheran General Hospital, December, 2000

11. Change of Face; Is Cosmetic Surgery for You?, Adult Education Series, Lutheran General Hospital and The Arlington Heights Public Library, December, 2000

12. Updates in Breast Reconstruction, The Breast Center, Lutheran General Hospital, January 2001

13. Abdominal Wall Reconstruction, Trauma Conference, Lutheran General Hospital, February 2001

14. Wound Care, Rush North Shore Medical Center, March 2001

15. Breast Reconstruction, Diagnosis and Treatment Updates on Breast Cancer, Lutheran General Hospital, April 2001

16. Wound Care and V.A.C. Therapy, Double Tree Hotel, Skokie, Il October 2001

17. The Role of the V.A.C. in Reconstructive Surgery, LaCrosse, WI November 2001

18. Dressing for Success: The Role of the V.A.C. in Reconstructive Surgery, Grand Rounds, The University of Minnesota Section of Plastic and Reconstructive, Minneapolis, MN January, 2002

19. The Vacuum Assisted Closure Device in the Management of Complex Soft Tissue Defects, Eau Claire, WI February, 2002

20. The Vacuum Assisted Closure Device in Acute & Traumatic Soft Tissue Injuries, Orland Park, Il March, 2002

21. Body Contouring After Weight Loss, The Gurnee Weight Loss Support Group, Gurnee, Il April, 2002

22. An Algorithm to Complex Soft Tissue Reconstruction With Negative Pressure Therapy, Owensboro Mercy Medical Center, Owensboro, Ky, April, 2002

23. Breast and Body Contouring, St. Francis Hospital Weight Loss Support Group, Evanston, Il April, 2002

24. The Wound Closure Ladder vs. The Reconstructive Elevator, Surgical Grand Rounds, Lutheran General Hospital, Park Ridge, Il, May, 2002.

25. An Algorithm for Complex Soft Tissue Reconstruction with the Vacuum Assisted Closure Device, The Field Museum, Chicago,Il, May, 2002

26. The Role of Negative Pressure Wound Therapy in Reconstructive Surgery, Kinetic Concepts, Inc. San Antonio, Texas, July 31, 2002

27. Management of Complex Soft Tissue Injuries of the Lower Extremity, Chicago Trauma Symposium, August 2-5, 2002, Chicago, Illinois:

28. Wound Bed Preparation, Smith Nephew, Oak Brook, Il, August 6, 2002

29. Getting Under Your Skin...Is Cosmetic Surgery for You?, Rush North Shore Adult Continuing Education Series, Skokie, Il August 28, 2002.

30. The Role of Negative Pressure Therapy in Complex Soft Tissue Wounds, Columbia/St. Mary's Wound, Ostomy, and Continence Nurse Program, Milwaukee, Wi, September 17, 2002

31. A Systematic Approach to Functional Restoration, Grand Rounds, Dept. of Physical Therapy and Rehabilitation Medicine, Lutheran General Hospital, September 19, 2002

32. The Role of Negative Pressure Wound Therapy in Reconstructive Surgery, Ann Arbor, Mi September 26, 2002

33. Dressing for Success: The Role of the Vaccuum Assisted Closure Device in Plastic Surgery, Indianopolis, In November 11, 2002

34. The Wound Closure Ladder Versus the Reconstructive Elevator, Crystal Lake, Il November 21, 2002

35. A Systematic Approach to Functional Restoration, Grand Rounds, Dept. of Physical Therapy, Evanston Northwestern Healthcare, Evanston, Il February 13, 2003

36. Case Studies in Traumatic Wound Reconstruction, American Association of Critical Care Nurses, Northwest Chicago Area Chapter, Park Ridge, Il February 19, 2003

37. Reconstruction of Complex Soft Tissue Injuries of the Lower Extremity, Podiatry Lecture Series, Rush North Shore Medical Center, Skokie, Il March 5, 2003

38. The Use of Negative Pressure Wound Therapy in Reconstructive Surgery, Kalamazoo, Mi March 19, 2003

39. Updates in Breast Reconstruction, The Midwest Clinical Conference, The Chicago Medical Society, Chicago, Il March 21, 2003

40. Updates of Vacuum Assisted Closure, Grand Rounds, The Medical College of Wisconsin, Department of Plastic Surgery, Milwaukee, Wi March 26, 2003

41. Breast Reconstruction, Surgical Grand Rounds, Lutheran General Hospital, Park Ridge, Il March 27, 2003

42. Decision-Making in Breast Reconstruction: Plastic Surgeons as Members of a Multi-Disciplinary Team, 1st Annual Advocate Lutheran General Hospital Breast Cancer Symposium, Rosemont, Il, April 11, 2003

43. The Wound Closure Ladder Versus The Reconstructive Elevator, Duluth, Mn, April 24, 2003

44. Dressing For Successs: The Role of The Wound VAC in Reconstructive Surgery, Detroit, Mi, May 9, 2003

45. Plastic Surgery Pearls, Grand Rounds Orthopedic Surgery Physician Assistants Lutheran General Hospital and Finch University of Health Sciences, Park Ridge, Il, June 5, 2003

46. A Systematic Approach to Complex Reconstruction, 12th Annual Vendor Fair "Surgical Innovations," October 18, 2003, Lutheran General Hospital, Park Ridge, Il 2003

47. Dressing For Success: The Role of the Wound VAC in Reconstructive Surgery, American Society of Plastic Surgery, October 26, 2003, San Diego, CA

48. Beautiful You: From Botox to Weekend Surgeries, 21st Century Cosmetic Considerations, March 21, 2004 Hadassah Women's Health Symposium, Skokie, Il

49. Updates in Breast Reconstruction, The 2nd Annual Breast Cancer Symposium, Advocate Lutheran General, Hyatt Rosemont, April 2, 2004

50. Head and Neck Reconstruction, Grand Rounds, The University of Illinois Metropolitan Group Hospitals Residency in General Surgery, Advocate Lutheran General Hospital, May 6, 2004

51. Abdominal Wall Reconstruction, Surgeons Forum, LifeCell Corporation, May 15, 2004, Chicago, Il

52. 4th Annual Chicagoland Day of Sharing for Breast Cancer Awareness, Saturday, October 2, 2004, Hoffman Estates, Il

53. Abdominal Wall Reconstruction, University of Illinois Metropolitan Group Hospitals Residency in General Surgery, November 19, 2004, Skokie, Il

54. Advances in Wound Care, Wound and Skin Care Survival Skills, Advocate Good Samaritan Hospital, Tuesday, February 8, 2005, Downer's Grove, Il

55. Plastic Surgery: A Five Year Perspective in Practice, Grand Rounds, The University of Chicago, May 18, 2005, Chicago, Il

56. New Techniques in Breast Reconstruction, The Cancer Wellness Center, October 11, 2005 Northbrook, Il

57. Principles of Plastic Surgery; Soft Tissue Reconstruction of the Hand, Rehab Connections, Inc., Hand, Wrist, and Elbow Forum, October 28, 2005, Homer Glen, Il

58. Principles of Plastic Surgery, Lutheran General Hospital Quarterly Trauma Conference, November 9, 2005, Park Ridge, Il

59. Principles of Plastic Surgery, Continuing Medical Education, St. Francis Hospital, November 15, 2005, Evanston, Il

60. Dressing for Success: A Seven Year Experience with Negative Pressure Wound Therapy, Kinetic Concepts Inc, November 30, 2005, Glenview, Il.

61. Breast Reconstruction: The Next Generation, Breast Tumor Conference, Lutheran General Hospital, May 9, 2006.

62. Complex Wound Care: Skin Grafts, Flaps, and Reconstruction, The Elizabeth D. Wick Symposium on Wound Care, *Current Concepts in Advanced Healing: An Update*, Rush North Shore Medical Center, November 4, 2006.

63. An Approach to Maxillofacial Trauma: Grand Rounds, Lutheran General Hospital/Univ. of Illinois Metropolitan Group Hospital Residency in General Surgery, November 9, 2006.

64. "From Paris to Park Ridge", Northern Trust and Advocate Lutheran General Hospital, Northern Trust Bank, June 7, 2007.

65. "Private Practice Plastic Surgery: A Seven Year Perspective," Grand Rounds, The University of Chicago, Section of Plastic Surgery.

66. "Meet the Experts on Breast Cancer," 7th Annual Chicagoland Day of Sharing, Sunday, April 13th, 2008

67. Gender Confirmation Surgey: Surgical Options and Decision-Making, The University of Minnesota, Division of Human Sexuality, May 10, 2008, Minneapolis, Minnesota.

68. "Private Practice Plastic Surgery: A Seven Year Perspective," Grand Rounds, Loyola University, 2008 Section of Plastic Surgery.

69. "Management of Lower Extremity Trauma," Grand Rounds, The University of Chicago, Section of Plastic Surgery, October, 8, 2008.

70. "Concepts in Plastic Surgery: A Multi-Disciplinary Approach," Frontline Surgical Advancements, Lutheran General Hospital, November 1, 2008

71. "Surgical Techniques-New Surgical Techniques/Plastic Surgery/Prosthetics," Caldwell Breast Center CME Series, Advocate Lutheran General Hospital, November 12, 2008

72. "Genetics: *A Family Affair*" Panel Discussion: Predictive Genetic Testing, 23rd Annual Illinois Department of Public Health Conference, Oak Brook Hills Marriott Resort, Oak Brook, Il, March 18, 2009

73. "Gender Confirmation Surgery" Minnesota TransHealth and Wellness Conference, May 15, 2009, Metropolitan State University, Saint Paul, MN.

74. "The Role of Plastic Surgery in Wound Care, " Practical Wound Care A Multidisciplinary Approach, Advocate Lutheran General Hospital, October 9-10, 2009, Park Ridge, Il.

75. "In The Family," Panel, General Session III, 2009 Illinois Women's Health Conference, Illinois Dept. of Health, Office of Women's Health October 28-29, 2009, Oak Brook, Il.

76. "Patient Safety in Plastic Surgery," The University of Chicago, Section of Plastic Surgery, Grand Rounds, November 18, 2009.

77. "Compartment Syndrome," 6th Annual Advocate Injury Institute Symposium, Trauma 2009: Yes We Can!, November 19-20, 2009.

78. "Maxillofacial Trauma," 6th Annual Advocate Injury Institute Symposium, Trauma 2009: Yes We Can!, November 19-20, 2009.

79. "Management of Complex Lower Extremity Injuries," Grand Rounds, The Section of Plastic Surgery, The University of Chicago, December 16, 2009, Chicago, Il.

80. "Gender-Confirming MTF Surgery: Indications and Techniques," Working Group on Gender, New York State Psychiatric Institute, March 12, 2010

81. "Gender-Confirmation Surgery," Minnesota Trans Health and Wellness Conference, Metropolitan State University, St. Paul Campus, May 14th, 2010

82. "Physical Injuries and Impairments," Heroes Welcome Home The Chicago Association of Realtors, Rosemont, Illinois, May 25th, 2010.

83. "Genetics and Your Health," Hadassah Heals: Healing Mind, Body, & Soul, Wellness Fair, 2010, August 29, 2010, Wilmette, Illinois.

84. "GCS," Southern Comfort Conference 2010, September 6-11, 2010, Atlanta, GA.

85. "Gender Confirming Surgery," The Center, The LGBT Community Center, October 22, 2010 New York, NY.

86. "Gender Confirming Surgery," the Center, The LGBT Community Center, May 20, 2011, New York, NY.

87. "Gender Confirming Surgery," Roosevelt-St. Lukes Hospital, May 20, 2011, New York, NY

88. "Principles of Plastic Surgery," Learn about Ortho, Lutheran General Hospital, May 25, 2011, Park Ridge, Il.

89. "Forging Multidisciplinary Relationships in Private Practice," Chicago Breast Reconstruction Symposium 2011, September 9, 2011, Chicago, Il

90. "Gender Confirming Surgery," Minnesota TransHealth and Wellness Conference, Diverse Families: Health Through Community, September 10, 2011, Minneapolis, Minnesota

91. "Gender Confirming Surgery," University of Chicago, Pritzker School of Medicine, Anatomy Class, September 16, 2011, Chicago, Il

92. "Facial Trauma," 8th Annual Advocate Injury Institute Symposium, Trauma 2011: 40 years in the Making, Wyndham Lisle-Chicago, November 9-10, 2011

93. "Establishing a Community-Based Microsurgical Practice," QMP Reconstructive Symposium, November 18-20, 2011, Chicago, Il

94. "Surgery for Gender Identity Disorder," Grand Rounds, Dept. of Obstetrics and Gynecology, Northshore University Health System, December 7, 2011

95. "Managing Facial Fractures," Trauma Grand Rounds, Lutheran General Hospital, Park Ridge, Il July 17, 2012

96. "Principles of Transgender Medicine," The University of Chicago Pritzker School of Medicine, Chicago, Il, September 7, 2012

97. "State of the art breast reconstruction," Advocate Health Care, 11th Breast Imaging Symposium, January 26, 2013, Park Ridge, Il.

98. "State of the art breast reconstruction," Grand Rounds, Dept. of Surgery, Mount Sinai Hospital, April 25, 2013, Chicago, Il.

99. "Getting under your skin: is cosmetic surgery right for you?" Lutheran General Hospital community lecture series, May 7, 2013, Park Ridge, Il.

100. "Gender Confirming Surgery," University of Chicago, Pritzker School of Medicine, Anatomy Class, September 27, 2013, Chicago, Il

101. "State of the Art Breast Reconstruction," Edward Cancer Center, Edward Hospital, October 22, 2013, Naperville, Il

102. "Transgender Medicine and Ministry," Pastoral Voice, Advocate Lutheran General Hospital, October 23, 2013, Park Ridge, Il

103. "Principles of Transgender Medicine and Surgery," The University of Illinois at Chicago College of Medicine, January 28, 2014, Chicago, Il

104. "Principles of Transgender Medicine and Surgery," Latest Surgical Innovations and Considerations, 22nd Annual Educational Workshop, Advocate Lutheran General Hospital, March 1, 2014, Park Ridge, Il.

105. "Principles of Transgender Medicine: Gender Confirming Surgery," Loyola University Medical Center, March 12, 2014.

106. "Principles of Plastic Surgery," Grand Rounds, Dept. of Obstetrics and Gynecology, Lutheran General Hospital, September 12, 2014.

107. "Gender Confirmation Surgery," The University of Chicago, Pritzker School of Medicine, October 3, 2014

108. "Private Practice: Is There a Future?" The Annual Meeting of The American Society of Plastic Surgical Administrators/The American Society of Plastic Surgery Assistants, Chicago, Il, October 11, 2014.

109. "Private Practice: Is There a Future?" The Annual Meeting of The American Society of Plastic Surgery Nurses, Chicago, Il, October 12, 2014.

110. "Gender Confirmation Surgery" Grand Rounds, The University of Minnesota, Dept. of Plastic Surgery, Minneapolis, MN, October 29, 2014.

111. "Body Contour After Massive Weight Loss," The Bariatric Support Group, Advocate Lutheran General Hospital, February 5, 2015, Lutheran General Hospital, Park Ridge, Il.

112. "Gender Confirmation Surgery," The School of the Art Institute of Chicago, February 1, 2015, Chicago, Il.

113. "Gender Confirmation Surgery," The Community Kinship Life/Bronx Lebanon Department of Family Medicine, Bronx, NY, March 6, 2015

114. "Gender Confirmation Surgery," Educational Inservice, Lutheran General Hospital, Park Ridge, Il, April 20, 2015

115. "Principles of Plastic Surgery, " Surgical Trends, Lutheran General Hospital, Park Ridge, Il, May 16, 2015

116. "Updates on Gender Confirmation Surgery, " Surgical Trends, Lutheran General Hospital, Park Ridge, Il, May 16, 2015

117. "Gender Confirmation Surgery," Lurie Childrens' Hospital, Chicago, Il, May 18, 2015,Chicago, Il 2015.

118. "Gender Confirmation Surgery," TransClinical Care and Management Track Philadelphia Trans-Health Conference, June 5, 2015, Philadelphia, Pa.

119. "Gender Confirmation Surgery: A Fifteen Year Experience," Grand Rounds, The University of Minnesota, Plastic and Reconstructive Surgery and the Program in Human Sexuality, July 30, 2015, Minneapolis, Mn

120. "Gender Confirmation Surgery," Grand Rounds, Tel Aviv Medical Center, Tel Aviv, Israel, August 13, 2015

121. "Gender Confirmation Surgery," Grand Rounds, University of Illinois, Dept of Family Medicine, September 2, 2015

122. "Principles of Plastic Surgery," Grand Rounds, St. Francis Hospital, Evanston, Il September 18, 2015

123. "Gender Confirmation Surgery," Midwest LGBTQ Health Symposium, Chicago, Il, October 2, 2015

124. "Gender Confirmation Surgery," Southern Comfort Conference, Weston, Fl, October 3, 2015

125. "Surgical Transitions for Transgender Patients," Transgender Health Training Institute, Rush University Medical Center, Chicago,Il, October 8, 2015

126. "Gender Confirmation Surgery," The Transgender Health Education Peach State Conference, Atlanta, GA, October 30, 2015

127. "Gender Confirmation Surgery," Weiss Memorial Medical Center, November 4, 2015, Chicago, Il

128. "Gender Confirmation Surgery," University of Illinois at Chicago, Operating Room Staff Inservice, November 18, 2015, Chicago, Il

129. "Gender Confirmation Surgery," University of Illinois at Chicago, Plastic Surgery and Urology Inservice, November 18, 2015, Chicago, Il

130. "Gender Confirmation Surgery," Weiss Memorial Medical Center, November 19, 2015, Chicago, Il

131. "Gender Confirmation Surgery," Section of Plastic Surgery, The University of Illinois at Chicago, January 13, 2016, Chicago, Il

132. "Gender Confirmation Surgery," Dept. of Medicine, Louis A. Weiss Memorial Hospital, February 18, 2016, Chicago, Il

133. "Gender Confirmation Surgery," BCBSIL Managed Care Roundtable March 2, 2016 Chicago, Il

134. "Gender Confirmation Surgery-MtF," Keystone Conference, March 10, 2016, Harrisburg, PA

135. "Gender Confirmation Surgery-FtM," Keystone Conference, March 10, 2016, Harrisburg, PA

136. "Gender Confirmation Surgery," Grand Rounds, Dept. of Ob-Gyn, March 25, 2016, Lutheran General Hospital, Park Ridge, Il 60068

137. "Surgical Management of the Transgender Patient," Spring Meeting, The New York Regional Society of Plastic Surgeons, April 16, 2016, New York, NY

138. "A Three Step Approach to Complex Lower Extremity Trauma," University of Illinois at Chicago, April 27, 2016, Chicago, Il.

139. "Gender Confirmation Surgery," Howard Brown Health Center, July 12, 2016, Chicago, Il

140. "Creating the Transgender Breast M-F; F-M", ASPS Breast surgery and Body Contouring Symposium, Santa Fe, NM, August 25-27, 2016

141. "Overview of Transgender Breast Surgery," ASPS Breast surgery and Body Contouring Symposium, Santa Fe, NM, August 25-27, 2016

142. "VTE Chemoprophylaxis in Cosmetic Breast and Body Surgery: Science or Myth", ASPS Breast surgery and Body Contouring Symposium, Santa Fe, NM, August 25-27, 2016

143. "Gender Confirmation Surgery," Gender Program, Lurie Childrens', Parent Group, September 20, 201, 467 W. Deming, Chicago, Il

144. "Gender Confirmation Surgery," The American Society of Plastic Surgeons Expo, September 24, 2016, Los Angeles, CA

145. Transgender Surgery, Management of the Transgender Patient, Female to Male Surgery, Overview and Phalloplasty, The American College of Surgeons, Clinical Congress 2016 October 16-20,2016 Washington, DC

146. "Gender Confirmation Surgery," The Department of Anesthesia, The University of Illinois at Chicago, November 9, 2016

147. "Gender Confirmation Surgery," The Division of Plastic Surgery, The University of Illinois at Chicago, December 14, 2016

148. "Gender Confirmation Surgery," Nursing Education, The University of Illinois at Chicago, January 10, 2017

149. "F2M-Radial Forearm Total Phalloplasty: Plastic Surgeon's Point of View," The European Association of Urologists, Meeting of the EAU Section of Genito-Urinary Reconstructive Surgeons (ESGURS), London, United Kingdom, March 23-26, 2017

150. "Gender Confirmation Surgery," Grand Rounds, The Department of Surgery, The University of North Carolina, March 29, 2017.

151. "Transgender Facial Surgery," *The Aesthetic Meeting 2017 – 50 Years of Aesthetics* - in San Diego, California April 27- May 2, 2017.

152. "Gender Confirmation Surgery: A New Surgical Frontier," 15th Annual Morristown Surgical Symposium Gender and Surgery, Morristown, NJ, May 5, 2017.

153. "Gender Confirmation Surgery: A New Surgical Frontier," Dept. of Obstetrics and Gynecology, The Medical College of Wisconsin, May 24, 2017

154. "Gender Confirmation Surgery: A New Surgical Frontier," Dept. of Obstetrics and Gynecology, Howard Brown Health Center, August 8, 2017

155. "Current State of the Art: Gynecomastia," ASPS Breast Surgery and Body Contouring Symposium, San Diego, CA, August 10-12, 2017

156. "Gender Confirmation Surgery-An Overview," ASPS Breast Surgery and Body Contouring Symposium, San Diego, CA, August 10-12, 2017

157. "Gender Confirmation Surgery," Grand Rounds, Dept. of Obstetrics and Gynecology, The University of Chicago, August 25, 2017

158. "Gender Confirmation Surgery," Wake Forest School of Medicine, Transgender Health Conference, Winston-Salem, NC, September 28-29, 2017

159. "Phalloplasty," Brazilian Professional Association for Transgender Health, Teatro Marcos Lindenberg, Universidade Federal de São Paulo (Unifesp), November 1-4, 2017

160. "Gender Confirmation Surgery," Brazlian Professional Association for Transgender Health/WPATH Session, Teatro Marcos Lindenberg, Universidade Federal de São Paulo (Unifesp), November 1-4, 2017

161. "Gender Confirmation Surgery," The Division of Plastic Surgery, The University of Illinois at Chicago, December 13, 2017, Chicago, Il

162. "Gender Confirmation Surgery," Gender and Sex Development Program, Ann and Robert H. Lurie Children's Hospital of Chicago, December 18, 2017, Chicago, Il

163. "Transgender Breast Augmentation," 34th Annual Atlanta Breast Surgery Symposium, January 19-21, 2018, Atlanta, GA

164. "Top Surgery: Transmasculine Chest Contouring," 34th Annual Atlanta Breast Surgery Symposium, January 19-21, 2018, Atlanta, GA

165. "Gender Confirmation Surgery," The 17th International Congress of Plastic and Reconstructive Surgery in Shanghai, March 18-25, 2018, Shanghai, China

166. "Gender Confirmation Surgery: Facial Feminization and Metoidioplasty," 97th Meeting of the American Association of Plastic Surgeons, Reconstructive Symposium, April 7-10, 2018, Seattle, WA

167. Moderator: "Gender Confirmation Surgery: Top Surgery", The Annual Meeting of The American Society of Aesthetic Plastic Surgery, April 26-May 1, 2018, New York, NY

168. "Gender Confirmation Surgery," Econsult monthly meeting, Dept. of Veterans' Affaris, May 24, 2018

169. "Gender Confirmation Surgery," Transgender Care Conference: Improving Care Across the Lifespan, Moses Cone Hospital, Greensboro, NC, June 8, 2018

170. "WPATH State of the Art," 1st Swiss Consensus Meeting on the Standardization of Sex Reassignment Surgery, The University of Basel, August 31, 2018-September 1, 2018
171. "Facial Feminiztion Surgery: The New Frontier?" 1st Swiss Consensus Meeting on the Standardization of Sex Reassignment Surgery, The University of Basel, August 31, 2018-September 1, 2018

172. "Current Techniques and Results in Mastectomies," 1st Swiss Consensus Meeting on the Standardization of Sex Reassignment Surgery, The University of Basel, August 31, 2018-September 1, 2018

173. "Gender Confirmation Surgery," The University of Chicago, Pritzker School of Medicine, September 7, 2018, Chicago, Il.

174. The Business End: Incorporating Gender Confirmation Surgery, Plastic Surgery The Meeting, Annual Meeting of The American Society of Plastic Surgeons, September 29, 2018, Chicago, Il

175. Body Contouring in Men, Gynecomastia, Plastic Surgery The Meeting, Annual Meeting of The American Society of Plastic Surgeons, September 30, 2018, Chicago, Il

176. Moderator: Breast Augmentation and Chest Surgery in Gender Diverse Individuals, Plastic Surgery The Meeting, Annual Meeting of The American Society of Plastic Surgeons, October 1, 2018, Chicago, Il

177. Moderator: Aesthetic Surgery of The Male Genitalia, Plastic Surgery The Meeting, Annual Meeting of The American Society of Plastic Surgeons, October 1, 2018, Chicago, Il

178. Moderator: Gender Confirmation Surgeries: The Standards of Care and Development of Gender Identity, Plastic Surgery The Meeting, Annual Meeting of The American Society of Plastic Surgeons, October 1, 2018, Chicago, Il

179. The Center for Gender Confirmation Surgery Lecture Series, "Introduction to Gender Confirmation Surgery," Weiss Memorial Hospital, October 17, 2018, Chicago, Il

180. Institute 3: Gender Dysphoria Across Development: Multidisciplinary Perspectives on the Evidence, Ethics, and Efficacy of Gender Transition, Gender Confirming Care in Adolescence: Evidence, Timing, Options, and Outcomes, The American Academy of Child and Adolescent Psychiatry, 65th Annual Meeting, October 22-27, 2018, Seattle, WA

181. Gender Confirmation Surgery, Combined Endocrine Grand Rounds, The University of Illinois at Chicago, Rush University, Cook County Hospital, January 8, 2019

182. Gender Confirmation Surgery: An Update, Division of Plastic Surgery, The University of Illinois at Chicago, January 23, 2019

183. Gender Confirmation Surgery from Top to Bottom: A 20 Year Experience, Grand Rounds, The Department of Surgery, Ochsner Health System, January 30, 2019, New Orleans, LA

184. Master Series of Microsurgery: Battle of the Masters One Reconstructive Problem – Two Masters with Two Different Approaches, Gender Affirmation, Male-to-Female Vaginoplasty: Intestinal Vaginoplasty, The American Society for Reconstructive Microsurgery, Palm Desert, California, February 2, 2019

185. Gender Confirmation Surgery: From Top to Bottom, The University of Toronto, Toronto, Canada, February 21, 2019

186. Gender Confirmation Surgery: Where are We, The University of Toronto, Toronto, Canada, February 21, 2019

187. Professors' Rounds: Gender Confirmation Surgery: A Twenty Year Experience, Princess Margaret Hospital, Toronto, Canada, February 22, 2019

188. A 3 Step Approach to Lower Extremity Trauma, Plastic Surgery at The Red Sea, Eilat, Israel, March 6-9, 2019.

189. Gender Surgery: Where are We Now?, Plastic Surgery at The Red Sea, Eilat, Israel, March 6-9, 2019.

190. Gender Confirmation Surgery, A Single Surgeon's 20 Year Experience, Plastic Surgery at The Red Sea, Eilat, Israel, March 6-9, 2019.

191. Gender Confirmation Surgery: Where We Have Been and Where We Are Going, Grand Rounds, The University of Chicago, Section of Plastic Surgery, March 13, 2019

192. Gender Confirmation Surgery: From Top To Bottom, Resident Core Curriculum Conference, The University of Chicago, Section of Plastic Surgery, March 13, 2019.

193. "Gender Confirmation Surgery," WPATH/AMSA Medical School Trans Health Elective, Webinar, March 13, 2019

194. Robotic Vaginoplasty: An Alternative to Penile Inversion Vaginoplasty in Cases of Insufficient Skin, Vaginal Stenosis, and Rectovaginal Fistula. The European Professional Association for Transgender Health, April 9-13, Rome, Italy

195. Current State of Gender-Affirming Surgery in the US and Beyond, Gender-affirming genital surgery presented by the American Urologic Association in collaboration with the Society for Genitourinary Reconstructive Surgeons (GURS), May 2, 2019, Chicago, Il

196. Surgical Training-How Can I get it, The Aesthetic Meeting 2019, New Orleans, LA, May 20, 2019

197. What is the Standard of Care in This New Frontier, The Aesthetic Meeting 2019, New Orleans, LA, May 20, 2019

198. The 20th Annual Chicago Orthopedic Symposium, August 15-18, 2019, Chicago, Il "Soft Tissue Defects-Getting Coverage"

199. Gender Confirmation Sugery, The Potocsnak Family Division of Adolescent and Young Adult Medicine, Ann & Robert H. Lurie Children's Hospital of Chicago, August 19, 2019

200. Anatomy, Embryology, and Surgery, The University of Chicago, First Year Medical Student Anatomy Lecture, September 9, 2019, The University of Chicago, Chicago, Il.

201. Gender Confirmation Surgery, Howard Brown Health Center Gender Affirming Learning Series, September 13, 2019, Chicago, Il.

202. Moderator, Patient Selection in Gender Affirming Survey Surgery, 88th Annual Meeting of The American Society of Plastic Surgeons, September 20-23, 2019, San Diego, CA

203. Breast Augmentation in Transwomen: Optimizing Aesthetics and Avoiding Revisions, 88th Annual Meeting of The American Society of Plastic Surgeons, September 20-23, 2019, San Diego, CA

204. Breast Reconstruction, State of the Art, NYU-Langone Health, NYU School of Medicine, Standards of Care and Insurance Coverage, Saturday, November 23, 2019, New York, NY.

205. ASRM Masters Series in Microsurgery: Think Big, Act Small: The Building Blocks for Success, "Building a Microsurgery Private Practice from the Ground Up", 2020 ASRM Annual Meeting, Ft. Lauderdale, Florida, January 10-14, 2020

206. ASPS/ASRM Combined Panel II: Gender Affirmation Surgery: Reconstruction Challenges of Function and Sensation, 2020 ASRM Annual Meeting, Ft. Lauderdale, Florida, January 10-14, 2020

207. Rush University Medical Center, Division of Urology, Grand Rounds, "Gender Confirmation Surgery: A Single Surgeon's Experience," January 22, 2020

208. Rush University Medical Center, Department of General Surgery, Grand Rounds, "Gender Confirmation Surgery: A Single Surgeon's Experience," February 5, 2020.

209. WPATH/AMSA (American Medical Association) Gender Scholar Course, Webinar, March 11, 2020

210. Rush University Medical Center, Division of Plastic Surgery, Weekly Presentation, Gender Confirmation Surgery: Can a Surgeon Provide Informed Consent?, April 29, 2020

211. Legal Issues Faced by the Transgender Community, ISBA Standing Committee on Women and The Law and the ISBA Standing Committee on Sexual Orientation and Gender Identity, Co-Sponsored by the National Association of Women Judges District 8, Live Webinar, May 28, 2020

212. Principles of Transgender Surgery, National Association of Women's Judges, District 8, Webinar, June 4, 2020

213. Gender-Affirming Surgery, National Association of Women's Judges, District 8, Webinar, July 8, 2020

214. Gender-Affirming Surgery, The University of Chicago, Pritzker School of Medicine, 1st year Anatomy, September 15, 2020

215. Gender-Affirming Surgery, Rush University Medical School, 2nd year Genitourinary Anatomy, September 16, 2020.

216. Surgical Management of the Transgender Patient, Rosalind Franklin University, The Chicago Medical School, Plastic Surgery Interest Group, October 7, 2020

217. Breast Augmentation in Transgender Individuals, The American Society of Plastic Surgeons Spring Meeting, March 20, 2021

WPATH WORLD PROFESSIONAL ASSOCIATION for TRANSGENDER HEALTH

Standards of Care

for the Health of Transsexual, Transgender, and Gender-Nonconforming People

The World Professional Association for Transgender Health

www.wpath.org

Version 7

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Standards of Care

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Purpose and Use of the *Standards of Care*

The World Professional Association for Transgender Health (WPATH)[I] is an international, multidisciplinary, professional association whose mission is to promote evidence-based care, education, research, advocacy, public policy, and respect in transsexual and transgender health. The vision of WPATH is a world wherein transsexual, transgender, and gender-nonconforming people benefit from access to evidence-based health care, social services, justice, and equality.

One of the main functions of WPATH is to promote the highest standards of health care for individuals through the articulation of *Standards of Care (SOC) for the Health of Transsexual, Transgender, and Gender Nonconforming People*. The *SOC* are based on the best available science and expert professional consensus.[II] Most of the research and experience in this field comes from a North American and Western European perspective; thus, adaptations of the *SOC* to other parts of the world are necessary. Suggestions for ways of thinking about cultural relativity and cultural competence are included in this version of the *SOC*.

The overall goal of the *SOC* is to provide clinical guidance for health professionals to assist transsexual, transgender, and gender-nonconforming people with safe and effective pathways to achieving lasting personal comfort with their gendered selves, in order to maximize their overall health, psychological well-being, and self-fulfillment. This assistance may include primary care, gynecologic and urologic care, reproductive options, voice and communication therapy, mental health services (e.g., assessment, counseling, psychotherapy), and hormonal and surgical treatments. While this is primarily a document for health professionals, the *SOC* may also be used by individuals, their families, and social institutions to understand how they can assist with promoting optimal health for members of this diverse population.

WPATH recognizes that health is dependent upon not only good clinical care but also social and political climates that provide and ensure social tolerance, equality, and the full rights of citizenship. Health is promoted through public policies and legal reforms that promote tolerance and equity

I Formerly the Harry Benjamin International Gender Dysphoria Association

II The *Standards of Care (SOC), Version 7,* represents a significant departure from previous versions. Changes in this version are based upon significant cultural shifts, advances in clinical knowledge, and appreciation of the many health care issues that can arise for transsexual, transgender, and gender-nonconforming people beyond hormone therapy and surgery (Coleman, 2009a, b, c, d).

for gender and sexual diversity and that eliminate prejudice, discrimination, and stigma. WPATH is committed to advocacy for these changes in public policies and legal reforms.

The *Standards of Care* Are Flexible Clinical Guidelines

The *SOC* are intended to be flexible in order to meet the diverse health care needs of transsexual, transgender, and gender-nonconforming people. While flexible, they offer standards for promoting optimal health care and guiding the treatment of people experiencing gender dysphoria—broadly defined as discomfort or distress that is caused by a discrepancy between a person's gender identity and that person's sex assigned at birth (and the associated gender role and/or primary and secondary sex characteristics) (Fisk, 1974; Knudson, De Cuypere, & Bockting, 2010b).

As in all previous versions of the *SOC*, the criteria put forth in this document for hormone therapy and surgical treatments for gender dysphoria are clinical guidelines; individual health professionals and programs may modify them. Clinical departures from the *SOC* may come about because of a patient's unique anatomic, social, or psychological situation; an experienced health professional's evolving method of handling a common situation; a research protocol; lack of resources in various parts of the world; or the need for specific harm-reduction strategies. These departures should be recognized as such, explained to the patient, and documented through informed consent for quality patient care and legal protection. This documentation is also valuable for the accumulation of new data, which can be retrospectively examined to allow for health care—and the *SOC*—to evolve.

The *SOC* articulate standards of care but also acknowledge the role of making informed choices and the value of harm-reduction approaches. In addition, this version of the *SOC* recognizes and validates various expressions of gender that may not necessitate psychological, hormonal, or surgical treatments. Some patients who present for care will have made significant self-directed progress towards gender role changes, transition, or other resolutions regarding their gender identity or gender dysphoria. Other patients will require more intensive services. Health professionals can use the *SOC* to help patients consider the full range of health services open to them, in accordance with their clinical needs and goals for gender expression.

Global Applicability of the *Standards of Care*

While the *SOC* are intended for worldwide use, WPATH acknowledges that much of the recorded clinical experience and knowledge in this area of health care is derived from North American and Western European sources. From place to place, both across and within nations, there are differences in all of the following: social attitudes towards transsexual, transgender, and gender-nonconforming people; constructions of gender roles and identities; language used to describe different gender identities; epidemiology of gender dysphoria; access to and cost of treatment; therapies offered; number and type of professionals who provide care; and legal and policy issues related to this area of health care (Winter, 2009).

It is impossible for the *SOC* to reflect all of these differences. In applying these standards to other cultural contexts, health professionals must be sensitive to these differences and adapt the *SOC* according to local realities. For example, in a number of cultures, gender-nonconforming people are found in such numbers and living in such ways as to make them highly socially visible (Peletz, 2006). In settings such as these, it is common for people to initiate a change in their gender expression and physical characteristics while in their teens or even earlier. Many grow up and live in a social, cultural, and even linguistic context quite unlike that of Western cultures. Yet almost all experience prejudice (Peletz, 2006; Winter, 2009). In many cultures, social stigma towards gender nonconformity is widespread and gender roles are highly prescriptive (Winter et al., 2009). Gender-nonconforming people in these settings are forced to be hidden and, therefore, may lack opportunities for adequate health care (Winter, 2009).

The *SOC* are not intended to limit efforts to provide the best available care to all individuals. Health professionals throughout the world—even in areas with limited resources and training opportunities—can apply the many core principles that undergird the *SOC*. These principles include the following: Exhibit respect for patients with nonconforming gender identities (do not pathologize differences in gender identity or expression); provide care (or refer to knowledgeable colleagues) that affirms patients' gender identities and reduces the distress of gender dysphoria, when present; become knowledgeable about the health care needs of transsexual, transgender, and gender-nonconforming people, including the benefits and risks of treatment options for gender dysphoria; match the treatment approach to the specific needs of patients, particularly their goals for gender expression and need for relief from gender dysphoria; facilitate access to appropriate care; seek patients' informed consent before providing treatment; offer continuity of care; and be prepared to support and advocate for patients within their families and communities (schools, workplaces, and other settings).

Terminology is culture- and time-dependent and is rapidly evolving. It is important to use respectful language in different places and times, and among different people. As the *SOC* are translated into other languages, great care must be taken to ensure that the meanings of terms are accurately translated. Terminology in English may not be easily translated into other languages, and vice versa. Some languages do not have equivalent words to describe the various terms within this document; hence, translators should be cognizant of the underlying goals of treatment and articulate culturally applicable guidance for reaching those goals.

The Difference Between Gender Nonconformity and Gender Dysphoria

Being Transsexual, Transgender, or Gender-Nonconforming Is a Matter of Diversity, Not Pathology

WPATH released a statement in May 2010 urging the de-psychopathologization of gender nonconformity worldwide (WPATH Board of Directors, 2010). This statement noted that "the expression of gender characteristics, including identities, that are not stereotypically associated with one's assigned sex at birth is a common and culturally diverse human phenomenon [that] should not be judged as inherently pathological or negative."

Unfortunately, there is stigma attached to gender nonconformity in many societies around the world. Such stigma can lead to prejudice and discrimination, resulting in "minority stress" (I. H. Meyer, 2003). Minority stress is unique (additive to general stressors experienced by all people), socially based, and chronic, and may make transsexual, transgender, and gender-nonconforming individuals more vulnerable to developing mental health concerns such as anxiety and depression (Institute of Medicine, 2011). In addition to prejudice and discrimination in society at large, stigma can contribute to abuse and neglect in one's relationships with peers and family members, which in turn can lead to psychological distress. However, these symptoms are socially induced and are not inherent to being transsexual, transgender, or gender-nonconforming.

Gender Nonconformity Is Not the Same as Gender Dysphoria

Gender nonconformity refers to the extent to which a person's gender identity, role, or expression differs from the cultural norms prescribed for people of a particular sex (Institute of Medicine, 2011). *Gender dysphoria* refers to discomfort or distress that is caused by a discrepancy between a person's gender identity and that person's sex assigned at birth (and the associated gender role and/or primary and secondary sex characteristics) (Fisk, 1974; Knudson, De Cuypere, & Bockting, 2010b). Only *some* gender-nonconforming people experience gender dysphoria at *some* point in their lives.

Treatment is available to assist people with such distress to explore their gender identity and find a gender role that is comfortable for them (Bockting & Goldberg, 2006). Treatment is individualized: What helps one person alleviate gender dysphoria might be very different from what helps another person. This process may or may not involve a change in gender expression or body modifications. Medical treatment options include, for example, feminization or masculinization of the body through hormone therapy and/or surgery, which are effective in alleviating gender dysphoria and are medically necessary for many people. Gender identities and expressions are diverse, and hormones and surgery are just two of many options available to assist people with achieving comfort with self and identity.

Gender dysphoria can in large part be alleviated through treatment (Murad et al., 2010). Hence, while transsexual, transgender, and gender-nonconforming people may experience gender dysphoria at some points in their lives, many individuals who receive treatment will find a gender role and expression that is comfortable for them, even if these differ from those associated with their sex assigned at birth, or from prevailing gender norms and expectations.

Diagnoses Related to Gender Dysphoria

Some people experience gender dysphoria at such a level that the distress meets criteria for a formal diagnosis that might be classified as a mental disorder. Such a diagnosis is not a license for stigmatization or for the deprivation of civil and human rights. Existing classification systems such as the *Diagnostic Statistical Manual of Mental Disorders (DSM)* (American Psychiatric Association, 2000) and the *International Classification of Diseases* (*ICD*) (World Health Organization, 2007) define hundreds of mental disorders that vary in onset, duration, pathogenesis, functional disability, and treatability. All of these systems attempt to classify clusters of symptoms and conditions, not the individuals themselves. A disorder is a description of something with which a person might struggle, not a description of the person or the person's identity.

Thus, transsexual, transgender, and gender-nonconforming individuals are not inherently disordered. Rather, the distress of gender dysphoria, when present, is the concern that might be diagnosable and for which various treatment options are available. The existence of a diagnosis for such dysphoria often facilitates access to health care and can guide further research into effective treatments.

Research is leading to new diagnostic nomenclatures, and terms are changing in both the *DSM* (Cohen-Kettenis & Pfäfflin, 2010; Knudson, De Cuypere, & Bockting, 2010b; Meyer-Bahlburg, 2010; Zucker, 2010) and the *ICD*. For this reason, familiar terms are employed in the *SOC* and definitions are provided for terms that may be emerging. Health professionals should refer to the most current diagnostic criteria and appropriate codes to apply in their practice areas.

IV
Epidemiologic Considerations

Formal epidemiologic studies on the incidence[III] and prevalence[IV] of transsexualism specifically or transgender and gender-nonconforming identities in general have not been conducted, and efforts to achieve realistic estimates are fraught with enormous difficulties (Institute of Medicine, 2011; Zucker & Lawrence, 2009). Even if epidemiologic studies established that a similar proportion of transsexual, transgender, or gender-nonconforming people existed all over the world, it is likely that cultural differences from one country to another would alter both the behavioral expressions of different gender identities and the extent to which gender dysphoria—distinct from one's gender identity—is actually occurring in a population. While in most countries, crossing normative gender boundaries generates moral censure rather than compassion, there are examples in certain cultures of gender-nonconforming behaviors (e.g., in spiritual leaders) that are less stigmatized and even revered (Besnier, 1994; Bolin, 1988; Chiñas, 1995; Coleman, Colgan, & Gooren, 1992; Costa & Matzner, 2007; Jackson & Sullivan, 1999; Nanda, 1998; Taywaditep, Coleman, & Dumronggittigule, 1997).

For various reasons, researchers who have studied incidence and prevalence have tended to focus on the most easily counted subgroup of gender-nonconforming individuals: transsexual individuals who experience gender dysphoria and who present for gender-transition-related care at specialist gender clinics (Zucker & Lawrence, 2009). Most studies have been conducted in European countries such as Sweden (Wålinder, 1968, 1971), the United Kingdom (Hoenig & Kenna, 1974),

III **incidence**—the number of new cases arising in a given period (e.g., a year)
IV **prevalence**—the number of individuals having a condition, divided by the number of people in the general population

the Netherlands (Bakker, Van Kesteren, Gooren, & Bezemer, 1993; Eklund, Gooren, & Bezemer, 1988; van Kesteren, Gooren, & Megens, 1996), Germany (Weitze & Osburg, 1996), and Belgium (De Cuypere et al., 2007). One was conducted in Singapore (Tsoi, 1988).

De Cuypere and colleagues (2007) reviewed such studies, as well as conducted their own. Together, those studies span 39 years. Leaving aside two outlier findings from Pauly in 1965 and Tsoi in 1988, ten studies involving eight countries remain. The prevalence figures reported in these ten studies range from 1:11,900 to 1:45,000 for male-to-female individuals (MtF) and 1:30,400 to 1:200,000 for female-to-male (FtM) individuals. Some scholars have suggested that the prevalence is much higher, depending on the methodology used in the research (e.g., Olyslager & Conway, 2007).

Direct comparisons across studies are impossible, as each differed in their data collection methods and in their criteria for documenting a person as transsexual (e.g., whether or not a person had undergone genital reconstruction, versus had initiated hormone therapy, versus had come to the clinic seeking medically supervised transition services). The trend appears to be towards higher prevalence rates in the more recent studies, possibly indicating increasing numbers of people seeking clinical care. Support for this interpretation comes from research by Reed and colleagues (2009), who reported a doubling of the numbers of people accessing care at gender clinics in the United Kingdom every five or six years. Similarly, Zucker and colleagues (2008) reported a four- to five-fold increase in child and adolescent referrals to their Toronto, Canada clinic over a 30-year period.

The numbers yielded by studies such as these can be considered minimum estimates at best. The published figures are mostly derived from clinics where patients met criteria for severe gender dysphoria and had access to health care at those clinics. These estimates do not take into account that treatments offered in a particular clinic setting might not be perceived as affordable, useful, or acceptable by all self-identified gender dysphoric individuals in a given area. By counting only those people who present at clinics for a specific type of treatment, an unspecified number of gender dysphoric individuals are overlooked.

Other clinical observations (not yet firmly supported by systematic study) support the likelihood of a higher prevalence of gender dysphoria: (i) Previously unrecognized gender dysphoria is occasionally diagnosed when patients are seen with anxiety, depression, conduct disorder, substance abuse, dissociative identity disorders, borderline personality disorder, sexual disorders, and disorders of sex development (Cole, O'Boyle, Emory, & Meyer III, 1997). (ii) Some crossdressers, drag queens/kings or female/male impersonators, and gay and lesbian individuals may be experiencing gender dysphoria (Bullough & Bullough, 1993). (iii) The intensity of some people's gender dysphoria fluctuates below and above a clinical threshold (Docter, 1988). (iv) Gender nonconformity among FtM individuals tends to be relatively invisible in many cultures, particularly to Western health

professionals and researchers who have conducted most of the studies on which the current estimates of prevalence and incidence are based (Winter, 2009).

Overall, the existing data should be considered a starting point, and health care would benefit from more rigorous epidemiologic study in different locations worldwide.

V

Overview of Therapeutic Approaches for Gender Dysphoria

Advancements in the Knowledge and Treatment of Gender Dysphoria

In the second half of the 20th century, awareness of the phenomenon of gender dysphoria increased when health professionals began to provide assistance to alleviate gender dysphoria by supporting changes in primary and secondary sex characteristics through hormone therapy and surgery, along with a change in gender role. Although Harry Benjamin already acknowledged a spectrum of gender nonconformity (Benjamin, 1966), the initial clinical approach largely focused on identifying who was an appropriate candidate for sex reassignment to facilitate a physical change from male to female or female to male as completely as possible (e.g., Green & Fleming, 1990; Hastings, 1974). This approach was extensively evaluated and proved to be highly effective. Satisfaction rates across studies ranged from 87% of MtF patients to 97% of FtM patients (Green & Fleming, 1990), and regrets were extremely rare (1–1.5% of MtF patients and <1% of FtM patients; Pfäfflin, 1993). Indeed, hormone therapy and surgery have been found to be medically necessary to alleviate gender dysphoria in many people (American Medical Association, 2008; Anton, 2009; World Professional Association for Transgender Health, 2008).

As the field matured, health professionals recognized that while many individuals need both hormone therapy and surgery to alleviate their gender dysphoria, others need only one of these treatment options and some need neither (Bockting & Goldberg, 2006; Bockting, 2008; Lev, 2004). Often with the help of psychotherapy, some individuals integrate their trans- or cross-gender feelings into the gender role they were assigned at birth and do not feel the need to feminize or masculinize their body. For others, changes in gender role and expression are sufficient to alleviate

gender dysphoria. Some patients may need hormones, a possible change in gender role, but not surgery; others may need a change in gender role along with surgery, but not hormones. In other words, treatment for gender dysphoria has become more individualized.

As a generation of transsexual, transgender, and gender-nonconforming individuals has come of age—many of whom have benefitted from different therapeutic approaches—they have become more visible as a community and demonstrated considerable diversity in their gender identities, roles, and expressions. Some individuals describe themselves not as gender-nonconforming but as unambiguously cross-sexed (i.e., as a member of the other sex; Bockting, 2008). Other individuals affirm their unique gender identity and no longer consider themselves to be either male or female (Bornstein, 1994; Kimberly, 1997; Stone, 1991; Warren, 1993). Instead, they may describe their gender identity in specific terms such as transgender, bigender, or genderqueer, affirming their unique experiences that may transcend a male/female binary understanding of gender (Bockting, 2008; Ekins & King, 2006; Nestle, Wilchins, & Howell, 2002). They may not experience their process of identity affirmation as a "transition," because they never fully embraced the gender role they were assigned at birth or because they actualize their gender identity, role, and expression in a way that does not involve a change from one gender role to another. For example, some youth identifying as genderqueer have always experienced their gender identity and role as such (genderqueer). Greater public visibility and awareness of gender diversity (Feinberg, 1996) has further expanded options for people with gender dysphoria to actualize an identity and find a gender role and expression that are comfortable for them.

Health professionals can assist gender dysphoric individuals with affirming their gender identity, exploring different options for expression of that identity, and making decisions about medical treatment options for alleviating gender dysphoria.

Options for Psychological and Medical Treatment of Gender Dysphoria

For individuals seeking care for gender dysphoria, a variety of therapeutic options can be considered. The number and type of interventions applied and the order in which these take place may differ from person to person (e.g., Bockting, Knudson, & Goldberg, 2006; Bolin, 1994; Rachlin, 1999; Rachlin, Green, & Lombardi, 2008; Rachlin, Hansbury, & Pardo, 2010). Treatment options include the following:

- Changes in gender expression and role (which may involve living part time or full time in another gender role, consistent with one's gender identity);
- Hormone therapy to feminize or masculinize the body;

- Surgery to change primary and/or secondary sex characteristics (e.g., breasts/chest, external and/or internal genitalia, facial features, body contouring);
- Psychotherapy (individual, couple, family, or group) for purposes such as exploring gender identity, role, and expression; addressing the negative impact of gender dysphoria and stigma on mental health; alleviating internalized transphobia; enhancing social and peer support; improving body image; or promoting resilience.

Options for Social Support and Changes in Gender Expression

In addition (or as an alternative) to the psychological- and medical-treatment options described above, other options can be considered to help alleviate gender dysphoria, for example:

- In-person and online peer support resources, groups, or community organizations that provide avenues for social support and advocacy;
- In-person and online support resources for families and friends;
- Voice and communication therapy to help individuals develop verbal and non-verbal communication skills that facilitate comfort with their gender identity;
- Hair removal through electrolysis, laser treatment, or waxing;
- Breast binding or padding, genital tucking or penile prostheses, padding of hips or buttocks;
- Changes in name and gender marker on identity documents.

VI

Assessment and Treatment of Children and Adolescents With Gender Dysphoria

There are a number of differences in the phenomenology, developmental course, and treatment approaches for gender dysphoria in children, adolescents, and adults. In children and adolescents, a rapid and dramatic developmental process (physical, psychological, and sexual) is involved and

there is greater fluidity and variability in outcomes, particularly in prepubertal children. Accordingly, this section of the *SOC* offers specific clinical guidelines for the assessment and treatment of gender dysphoric children and adolescents.

Differences Between Children and Adolescents with Gender Dysphoria

An important difference between gender dysphoric children and adolescents is in the proportion for whom dysphoria persists into adulthood. Gender dysphoria during childhood does not inevitably continue into adulthood.[V] Rather, in follow-up studies of prepubertal children (mainly boys) who were referred to clinics for assessment of gender dysphoria, the dysphoria persisted into adulthood for only 6–23% of children (Cohen-Kettenis, 2001; Zucker & Bradley, 1995). Boys in these studies were more likely to identify as gay in adulthood than as transgender (Green, 1987; Money & Russo, 1979; Zucker & Bradley, 1995; Zuger, 1984). Newer studies, also including girls, showed a 12–27% persistence rate of gender dysphoria into adulthood (Drummond, Bradley, Peterson-Badali, & Zucker, 2008; Wallien & Cohen-Kettenis, 2008).

In contrast, the persistence of gender dysphoria into adulthood appears to be much higher for adolescents. No formal prospective studies exist. However, in a follow-up study of 70 adolescents who were diagnosed with gender dysphoria and given puberty-suppressing hormones, all continued with actual sex reassignment, beginning with feminizing/masculinizing hormone therapy (de Vries, Steensma, Doreleijers, & Cohen-Kettenis, 2010).

Another difference between gender dysphoric children and adolescents is in the sex ratios for each age group. In clinically referred, gender dysphoric children under age 12, the male/female ratio ranges from 6:1 to 3:1 (Zucker, 2004). In clinically referred, gender dysphoric adolescents older than age 12, the male/female ratio is close to 1:1 (Cohen-Kettenis & Pfäfflin, 2003).

As discussed in section IV and by Zucker and Lawrence (2009), formal epidemiologic studies on gender dysphoria—in children, adolescents, and adults—are lacking. Additional research is needed to refine estimates of its prevalence and persistence in different populations worldwide.

V Gender-nonconforming behaviors in children may continue into adulthood, but such behaviors are not necessarily indicative of gender dysphoria and a need for treatment. As described in section III, gender dysphoria is not synonymous with diversity in gender expression.

Phenomenology in Children

Children as young as age two may show features that could indicate gender dysphoria. They may express a wish to be of the other sex and be unhappy about their physical sex characteristics and functions. In addition, they may prefer clothes, toys, and games that are commonly associated with the other sex and prefer playing with other-sex peers. There appears to be heterogeneity in these features: Some children demonstrate extremely gender-nonconforming behavior and wishes, accompanied by persistent and severe discomfort with their primary sex characteristics. In other children, these characteristics are less intense or only partially present (Cohen-Kettenis et al., 2006; Knudson, De Cuypere, & Bockting, 2010a).

It is relatively common for gender dysphoric children to have coexisting internalizing disorders such as anxiety and depression (Cohen-Kettenis, Owen, Kaijser, Bradley, & Zucker, 2003; Wallien, Swaab, & Cohen-Kettenis, 2007; Zucker, Owen, Bradley, & Ameeriar, 2002). The prevalence of autism spectrum disorders seems to be higher in clinically referred, gender dysphoric children than in the general population (de Vries, Noens, Cohen-Kettenis, van Berckelaer-Onnes, & Doreleijers, 2010).

Phenomenology in Adolescents

In most children, gender dysphoria will disappear before, or early in, puberty. However, in some children these feelings will intensify and body aversion will develop or increase as they become adolescents and their secondary sex characteristics develop (Cohen-Kettenis, 2001; Cohen-Kettenis & Pfäfflin, 2003; Drummond et al., 2008; Wallien & Cohen-Kettenis, 2008; Zucker & Bradley, 1995). Data from one study suggest that more extreme gender nonconformity in childhood is associated with persistence of gender dysphoria into late adolescence and early adulthood (Wallien & Cohen-Kettenis, 2008). Yet many adolescents and adults presenting with gender dysphoria do not report a history of childhood gender-nonconforming behaviors (Docter, 1988; Landén, Wålinder, & Lundström, 1998). Therefore, it may come as a surprise to others (parents, other family members, friends, and community members) when a youth's gender dysphoria first becomes evident in adolescence.

Adolescents who experience their primary and/or secondary sex characteristics and their sex assigned at birth as inconsistent with their gender identity may be intensely distressed about it. Many, but not all, gender dysphoric adolescents have a strong wish for hormones and surgery. Increasing numbers of adolescents have already started living in their desired gender role upon entering high school (Cohen-Kettenis & Pfäfflin, 2003).

Among adolescents who are referred to gender identity clinics, the number considered eligible for early medical treatment—starting with GnRH analogues to suppress puberty in the first Tanner stages—differs among countries and centers. Not all clinics offer puberty suppression. If such treatment is offered, the pubertal stage at which adolescents are allowed to start varies from Tanner stage 2 to stage 4 (Delemarre-van de Waal & Cohen-Kettenis, 2006; Zucker et al., 2012). The percentages of treated adolescents are likely influenced by the organization of health care, insurance aspects, cultural differences, opinions of health professionals, and diagnostic procedures offered in different settings.

Inexperienced clinicians may mistake indications of gender dysphoria for delusions. Phenomenologically, there is a qualitative difference between the presentation of gender dysphoria and the presentation of delusions or other psychotic symptoms. The vast majority of children and adolescents with gender dysphoria are not suffering from underlying severe psychiatric illness such as psychotic disorders (Steensma, Biemond, de Boer, & Cohen-Kettenis, published online ahead of print January 7, 2011).

It is more common for adolescents with gender dysphoria to have coexisting internalizing disorders such as anxiety and depression, and/or externalizing disorders such as oppositional defiant disorder (de Vries et al., 2010). As in children, there seems to be a higher prevalence of autistic spectrum disorders in clinically referred, gender dysphoric adolescents than in the general adolescent population (de Vries et al., 2010).

Competency of Mental Health Professionals Working with Children or Adolescents with Gender Dysphoria

The following are recommended minimum credentials for mental health professionals who assess, refer, and offer therapy to children and adolescents presenting with gender dysphoria:

1. Meet the competency requirements for mental health professionals working with adults, as outlined in section VII;

2. Trained in childhood and adolescent developmental psychopathology;

3. Competent in diagnosing and treating the ordinary problems of children and adolescents.

Roles of Mental Health Professionals Working with Children and Adolescents with Gender Dysphoria

The roles of mental health professionals working with gender dysphoric children and adolescents may include the following:

1. Directly assess gender dysphoria in children and adolescents (see general guidelines for assessment, below).

2. Provide family counseling and supportive psychotherapy to assist children and adolescents with exploring their gender identity, alleviating distress related to their gender dysphoria, and ameliorating any other psychosocial difficulties.

3. Assess and treat any coexisting mental health concerns of children or adolescents (or refer to another mental health professional for treatment). Such concerns should be addressed as part of the overall treatment plan.

4. Refer adolescents for additional physical interventions (such as puberty-suppressing hormones) to alleviate gender dysphoria. The referral should include documentation of an assessment of gender dysphoria and mental health, the adolescent's eligibility for physical interventions (outlined below), the mental health professional's relevant expertise, and any other information pertinent to the youth's health and referral for specific treatments.

5. Educate and advocate on behalf of gender dysphoric children, adolescents, and their families in their community (e.g., day care centers, schools, camps, other organizations). This is particularly important in light of evidence that children and adolescents who do not conform to socially prescribed gender norms may experience harassment in school (Grossman, D'Augelli, & Salter, 2006; Grossman, D'Augelli, Howell, & Hubbard, 2006; Sausa, 2005), putting them at risk for social isolation, depression, and other negative sequelae (Nuttbrock et al., 2010).

6. Provide children, youth, and their families with information and referral for peer support, such as support groups for parents of gender-nonconforming and transgender children (Gold & MacNish, 2011; Pleak, 1999; Rosenberg, 2002).

Assessment and psychosocial interventions for children and adolescents are often provided within a multidisciplinary gender identity specialty service. If such a multidisciplinary service is not available, a mental health professional should provide consultation and liaison arrangements with a pediatric endocrinologist for the purpose of assessment, education, and involvement in any decisions about physical interventions.

Psychological Assessment of Children and Adolescents

When assessing children and adolescents who present with gender dysphoria, mental health professionals should broadly conform to the following guidelines:

1. Mental health professionals should not dismiss or express a negative attitude towards nonconforming gender identities or indications of gender dysphoria. Rather, they should acknowledge the presenting concerns of children, adolescents, and their families; offer a thorough assessment for gender dysphoria and any coexisting mental health concerns; and educate clients and their families about therapeutic options, if needed. Acceptance, and alleviation of secrecy, can bring considerable relief to gender dysphoric children/adolescents and their families.

2. Assessment of gender dysphoria and mental health should explore the nature and characteristics of a child's or adolescent's gender identity. A psychodiagnostic and psychiatric assessment—covering the areas of emotional functioning, peer and other social relationships, and intellectual functioning/school achievement—should be performed. Assessment should include an evaluation of the strengths and weaknesses of family functioning. Emotional and behavioral problems are relatively common, and unresolved issues in a child's or youth's environment may be present (de Vries, Doreleijers, Steensma, & Cohen-Kettenis, 2011; Di Ceglie & Thümmel, 2006; Wallien et al., 2007).

3. For adolescents, the assessment phase should also be used to inform youth and their families about the possibilities and limitations of different treatments. This is necessary for informed consent, but also important for assessment. The way that adolescents respond to information about the reality of sex reassignment can be diagnostically informative. Correct information may alter a youth's desire for certain treatment, if the desire was based on unrealistic expectations of its possibilities.

Psychological and Social Interventions for Children and Adolescents

When supporting and treating children and adolescents with gender dysphoria, health professionals should broadly conform to the following guidelines:

1. Mental health professionals should help families to have an accepting and nurturing response to the concerns of their gender dysphoric child or adolescent. Families play an important role in the psychological health and well-being of youth (Brill & Pepper, 2008; Lev, 2004). This also applies to peers and mentors from the community, who can be another source of social support.

2. Psychotherapy should focus on reducing a child's or adolescent's distress related to the gender dysphoria and on ameliorating any other psychosocial difficulties. For youth pursuing sex reassignment, psychotherapy may focus on supporting them before, during, and after reassignment. Formal evaluations of different psychotherapeutic approaches for this situation have not been published, but several counseling methods have been described (Cohen-Kettenis, 2006; de Vries, Cohen-Kettenis, & Delemarre-van de Waal, 2006; Di Ceglie & Thümmel, 2006; Hill, Menvielle, Sica, & Johnson, 2010; Malpas, in press; Menvielle & Tuerk, 2002; Rosenberg, 2002; Vanderburgh, 2009; Zucker, 2006).

   Treatment aimed at trying to change a person's gender identity and expression to become more congruent with sex assigned at birth has been attempted in the past without success (Gelder & Marks, 1969; Greenson, 1964), particularly in the long term (Cohen-Kettenis & Kuiper, 1984; Pauly, 1965). Such treatment is no longer considered ethical.

3. Families should be supported in managing uncertainty and anxiety about their child's or adolescent's psychosexual outcomes and in helping youth to develop a positive self-concept.

4. Mental health professionals should not impose a binary view of gender. They should give ample room for clients to explore different options for gender expression. Hormonal or surgical interventions are appropriate for some adolescents, but not for others.

5. Clients and their families should be supported in making difficult decisions regarding the extent to which clients are allowed to express a gender role that is consistent with their gender identity, as well as the timing of changes in gender role and possible social transition. For example, a client might attend school while undergoing social transition only partly (e.g., by wearing clothing and having a hairstyle that reflects gender identity) or completely (e.g., by also using a name and pronouns congruent with gender identity). Difficult issues include whether and when to inform other people of the client's situation, and how others in their lives might respond.

6. Health professionals should support clients and their families as educators and advocates in their interactions with community members and authorities such as teachers, school boards, and courts.

7. Mental health professionals should strive to maintain a therapeutic relationship with gender-nonconforming children/adolescents and their families throughout any subsequent social changes or physical interventions. This ensures that decisions about gender expression and the treatment of gender dysphoria are thoughtfully and recurrently considered. The same reasoning applies if a child or adolescent has already socially changed gender role prior to being seen by a mental health professional.

Social Transition in Early Childhood

Some children state that they want to make a social transition to a different gender role long before puberty. For some children, this may reflect an expression of their gender identity. For others, this could be motivated by other forces. Families vary in the extent to which they allow their young children to make a social transition to another gender role. Social transitions in early childhood do occur within some families with early success. This is a controversial issue, and divergent views are held by health professionals. The current evidence base is insufficient to predict the long-term outcomes of completing a gender role transition during early childhood. Outcomes research with children who completed early social transitions would greatly inform future clinical recommendations.

Mental health professionals can help families to make decisions regarding the timing and process of any gender role changes for their young children. They should provide information and help parents to weigh the potential benefits and challenges of particular choices. Relevant in this respect are the previously described relatively low persistence rates of childhood gender dysphoria (Drummond et al., 2008; Wallien & Cohen-Kettenis, 2008). A change back to the original gender role can be highly distressing and even result in postponement of this second social transition on the child's part (Steensma & Cohen-Kettenis, 2011). For reasons such as these, parents may want to present this role change as an exploration of living in another gender role rather than an irreversible situation. Mental health professionals can assist parents in identifying potential in-between solutions or compromises (e.g., only when on vacation). It is also important that parents explicitly let the child know that there is a way back.

Regardless of a family's decisions regarding transition (timing, extent), professionals should counsel and support them as they work through the options and implications. If parents do not allow their young child to make a gender-role transition, they may need counseling to assist them with meeting their child's needs in a sensitive and nurturing way, ensuring that the child has ample possibilities to explore gender feelings and behavior in a safe environment. If parents do allow their young child to make a gender role transition, they may need counseling to facilitate a positive experience for their child. For example, they may need support in using correct pronouns, maintaining a safe and supportive environment for their transitioning child (e.g., in school, peer group settings), and communicating with other people in their child's life. In either case, as a child nears puberty, further assessment may be needed as options for physical interventions become relevant.

Physical Interventions for Adolescents

Before any physical interventions are considered for adolescents, extensive exploration of psychological, family, and social issues should be undertaken, as outlined above. The duration of this exploration may vary considerably depending on the complexity of the situation.

Physical interventions should be addressed in the context of adolescent development. Some identity beliefs in adolescents may become firmly held and strongly expressed, giving a false impression of irreversibility. An adolescent's shift towards gender conformity can occur primarily to please the parents and may not persist or reflect a permanent change in gender dysphoria (Hembree et al., 2009; Steensma et al., published online ahead of print January 7, 2011).

Physical interventions for adolescents fall into three categories or stages (Hembree et al., 2009):

1. *Fully reversible interventions*. These involve the use of GnRH analogues to suppress estrogen or testosterone production and consequently delay the physical changes of puberty. Alternative treatment options include progestins (most commonly medroxyprogesterone) or other medications (such as spironolactone) that decrease the effects of androgens secreted by the testicles of adolescents who are not receiving GnRH analogues. Continuous oral contraceptives (or depot medroxyprogesterone) may be used to suppress menses.

2. *Partially reversible interventions*. These include hormone therapy to masculinize or feminize the body. Some hormone-induced changes may need reconstructive surgery to reverse the effect (e.g., gynaecomastia caused by estrogens), while other changes are not reversible (e.g., deepening of the voice caused by testosterone).

3. *Irreversible interventions*. These are surgical procedures.

A staged process is recommended to keep options open through the first two stages. Moving from one stage to another should not occur until there has been adequate time for adolescents and their parents to assimilate fully the effects of earlier interventions.

Fully Reversible Interventions

Adolescents may be eligible for puberty-suppressing hormones as soon as pubertal changes have begun. In order for adolescents and their parents to make an informed decision about pubertal delay, it is recommended that adolescents experience the onset of puberty to at least Tanner Stage 2. Some children may arrive at this stage at very young ages (e.g., 9 years of age). Studies

evaluating this approach have only included children who were at least 12 years of age (Cohen-Kettenis, Schagen, Steensma, de Vries, & Delemarre-van de Waal, 2011; de Vries, Steensma et al., 2010; Delemarre-van de Waal, van Weissenbruch, & Cohen Kettenis, 2004; Delemarre-van de Waal & Cohen-Kettenis, 2006).

Two goals justify intervention with puberty-suppressing hormones: (i) their use gives adolescents more time to explore their gender nonconformity and other developmental issues; and (ii) their use may facilitate transition by preventing the development of sex characteristics that are difficult or impossible to reverse if adolescents continue on to pursue sex reassignment.

Puberty suppression may continue for a few years, at which time a decision is made to either discontinue all hormone therapy or transition to a feminizing/masculinizing hormone regimen. Pubertal suppression does not inevitably lead to social transition or to sex reassignment.

Criteria for Puberty-Suppressing Hormones

In order for adolescents to receive puberty-suppressing hormones, the following minimum criteria must be met:

1. The adolescent has demonstrated a long-lasting and intense pattern of gender nonconformity or gender dysphoria (whether suppressed or expressed);

2. Gender dysphoria emerged or worsened with the onset of puberty;

3. Any coexisting psychological, medical, or social problems that could interfere with treatment (e.g., that may compromise treatment adherence) have been addressed, such that the adolescent's situation and functioning are stable enough to start treatment;

4. The adolescent has given informed consent and, particularly when the adolescent has not reached the age of medical consent, the parents or other caretakers or guardians have consented to the treatment and are involved in supporting the adolescent throughout the treatment process.

Regimens, Monitoring, and Risks for Puberty Suppression

For puberty suppression, adolescents with male genitalia should be treated with GnRH analogues, which stop luteinizing hormone secretion and therefore testosterone secretion. Alternatively, they may be treated with progestins (such as medroxyprogesterone) or with other medications that block testosterone secretion and/or neutralize testosterone action. Adolescents with female genitalia should be treated with GnRH analogues, which stop the production of estrogens and

progesterone. Alternatively, they may be treated with progestins (such as medroxyprogesterone). Continuous oral contraceptives (or depot medroxyprogesterone) may be used to suppress menses. In both groups of adolescents, use of GnRH analogues is the preferred treatment (Hembree et al., 2009), but their high cost is prohibitive for some patients.

During pubertal suppression, an adolescent's physical development should be carefully monitored—preferably by a pediatric endocrinologist—so that any necessary interventions can occur (e.g., to establish an adequate gender appropriate height, to improve iatrogenic low bone mineral density) (Hembree et al., 2009).

Early use of puberty-suppressing hormones may avert negative social and emotional consequences of gender dysphoria more effectively than their later use would. Intervention in early adolescence should be managed with pediatric endocrinological advice, when available. Adolescents with male genitalia who start GnRH analogues early in puberty should be informed that this could result in insufficient penile tissue for penile inversion vaginoplasty techniques (alternative techniques, such as the use of a skin graft or colon tissue, are available).

Neither puberty suppression nor allowing puberty to occur is a neutral act. On the one hand, functioning in later life can be compromised by the development of irreversible secondary sex characteristics during puberty and by years spent experiencing intense gender dysphoria. On the other hand, there are concerns about negative physical side effects of GnRH analogue use (e.g., on bone development and height). Although the very first results of this approach (as assessed for adolescents followed over 10 years) are promising (Cohen-Kettenis et al., 2011; Delemarre-van de Waal & Cohen-Kettenis, 2006), the long-term effects can only be determined when the earliest-treated patients reach the appropriate age.

Partially Reversible Interventions

Adolescents may be eligible to begin feminizing/masculinizing hormone therapy, preferably with parental consent. In many countries, 16-year-olds are legal adults for medical decision-making and do not require parental consent. Ideally, treatment decisions should be made among the adolescent, the family, and the treatment team.

Regimens for hormone therapy in gender dysphoric adolescents differ substantially from those used in adults (Hembree et al., 2009). The hormone regimens for youth are adapted to account for the somatic, emotional, and mental development that occurs throughout adolescence (Hembree et al., 2009).

Irreversible Interventions

Genital surgery should not be carried out until (i) patients reach the legal age of majority to give consent for medical procedures in a given country, and (ii) patients have lived continuously for at least 12 months in the gender role that is congruent with their gender identity. The age threshold should be seen as a minimum criterion and not an indication in and of itself for active intervention.

Chest surgery in FtM patients could be carried out earlier, preferably after ample time of living in the desired gender role and after one year of testosterone treatment. The intent of this suggested sequence is to give adolescents sufficient opportunity to experience and socially adjust in a more masculine gender role, before undergoing irreversible surgery. However, different approaches may be more suitable, depending on an adolescent's specific clinical situation and goals for gender identity expression.

Risks of Withholding Medical Treatment for Adolescents

Refusing timely medical interventions for adolescents might prolong gender dysphoria and contribute to an appearance that could provoke abuse and stigmatization. As the level of gender-related abuse is strongly associated with the degree of psychiatric distress during adolescence (Nuttbrock et al., 2010), withholding puberty suppression and subsequent feminizing or masculinizing hormone therapy is not a neutral option for adolescents.

VII
Mental Health

Transsexual, transgender, and gender-nonconforming people might seek the assistance of a mental health professional for any number of reasons. Regardless of a person's reason for seeking care, mental health professionals should have familiarity with gender nonconformity, act with appropriate cultural competence, and exhibit sensitivity in providing care.

This section of the *SOC* focuses on the role of mental health professionals in the care of adults seeking help for gender dysphoria and related concerns. Professionals working with gender dysphoric children, adolescents, and their families should consult section VI.

Competency of Mental Health Professionals Working with Adults Who Present with Gender Dysphoria

The training of mental health professionals competent to work with gender dysphoric adults rests upon basic general clinical competence in the assessment, diagnosis, and treatment of mental health concerns. Clinical training may occur within any discipline that prepares mental health professionals for clinical practice, such as psychology, psychiatry, social work, mental health counseling, marriage and family therapy, nursing, or family medicine with specific training in behavioral health and counseling. The following are recommended minimum credentials for mental health professionals who work with adults presenting with gender dysphoria:

1. A master's degree or its equivalent in a clinical behavioral science field. This degree, or a more advanced one, should be granted by an institution accredited by the appropriate national or regional accrediting board. The mental health professional should have documented credentials from a relevant licensing board or equivalent for that country.

2. Competence in using the *Diagnostic Statistical Manual of Mental Disorders* and/or the *International Classification of Diseases* for diagnostic purposes.

3. Ability to recognize and diagnose coexisting mental health concerns and to distinguish these from gender dysphoria.

4. Documented supervised training and competence in psychotherapy or counseling.

5. Knowledgeable about gender-nonconforming identities and expressions, and the assessment and treatment of gender dysphoria.

6. Continuing education in the assessment and treatment of gender dysphoria. This may include attending relevant professional meetings, workshops, or seminars; obtaining supervision from a mental health professional with relevant experience; or participating in research related to gender nonconformity and gender dysphoria.

In addition to the minimum credentials above, it is recommended that mental health professionals develop and maintain cultural competence to facilitate their work with transsexual, transgender, and gender-nonconforming clients. This may involve, for example, becoming knowledgeable about current community, advocacy, and public policy issues relevant to these clients and their families. Additionally, knowledge about sexuality, sexual health concerns, and the assessment and treatment of sexual disorders is preferred.

Mental health professionals who are new to the field (irrespective of their level of training and other experience) should work under the supervision of a mental health professional with established competence in the assessment and treatment of gender dysphoria.

Tasks of Mental Health Professionals Working with Adults Who Present with Gender Dysphoria

Mental health professionals may serve transsexual, transgender, and gender-nonconforming individuals and their families in many ways, depending on a client's needs. For example, mental health professionals may serve as a psychotherapist, counselor, or family therapist, or as a diagnostician/assessor, advocate, or educator.

Mental health professionals should determine a client's reasons for seeking professional assistance. For example, a client may be presenting for any combination of the following health care services: psychotherapeutic assistance to explore gender identity and expression or to facilitate a coming-out process; assessment and referral for feminizing/masculinizing medical interventions; psychological support for family members (partners, children, extended family); psychotherapy unrelated to gender concerns; or other professional services.

Below are general guidelines for common tasks that mental health professionals may fulfill in working with adults who present with gender dysphoria.

Tasks Related to Assessment and Referral

1. Assess Gender Dysphoria

Mental health professionals assess clients' gender dysphoria in the context of an evaluation of their psychosocial adjustment (Bockting et al., 2006; Lev, 2004, 2009). The evaluation includes, at a minimum, assessment of gender identity and gender dysphoria, history and development of gender dysphoric feelings, the impact of stigma attached to gender nonconformity on mental health, and the availability of support from family, friends, and peers (for example, in-person or online contact with other transsexual, transgender, or gender-nonconforming individuals or groups). The evaluation may result in no diagnosis, in a formal diagnosis related to gender dysphoria, and/or in other diagnoses that describe aspects of the client's health and psychosocial adjustment. The role

of mental health professionals includes making reasonably sure that the gender dysphoria is not secondary to, or better accounted for, by other diagnoses.

Mental health professionals with the competencies described above (hereafter called "a qualified mental health professional") are best prepared to conduct this assessment of gender dysphoria. However, this task may instead be conducted by another type of health professional who has appropriate training in behavioral health and is competent in the assessment of gender dysphoria, particularly when functioning as part of a multidisciplinary specialty team that provides access to feminizing/masculinizing hormone therapy. This professional may be the prescribing hormone therapy provider or a member of that provider's health care team.

2. Provide Information Regarding Options for Gender Identity and Expression and Possible Medical Interventions

An important task of mental health professionals is to educate clients regarding the diversity of gender identities and expressions and the various options available to alleviate gender dysphoria. Mental health professionals then may facilitate a process (or refer elsewhere) in which clients explore these various options, with the goals of finding a comfortable gender role and expression and becoming prepared to make a fully informed decision about available medical interventions, if needed. This process may include referral for individual, family, and group therapy and/or to community resources and avenues for peer support. The professional and the client discuss the implications, both short- and long-term, of any changes in gender role and use of medical interventions. These implications can be psychological, social, physical, sexual, occupational, financial, and legal (Bockting et al., 2006; Lev, 2004).

This task is also best conducted by a qualified mental health professional, but may be conducted by another health professional with appropriate training in behavioral health and with sufficient knowledge about gender-nonconforming identities and expressions and about possible medical interventions for gender dysphoria, particularly when functioning as part of a multidisciplinary specialty team that provides access to feminizing/masculinizing hormone therapy.

3. Assess, Diagnose, and Discuss Treatment Options for Coexisting Mental Health Concerns

Clients presenting with gender dysphoria may struggle with a range of mental health concerns (Gómez-Gil, Trilla, Salamero, Godás, & Valdés, 2009; Murad et al., 2010) whether related or unrelated to what is often a long history of gender dysphoria and/or chronic minority stress. Possible concerns include anxiety, depression, self-harm, a history of abuse and neglect, compulsivity, substance abuse, sexual concerns, personality disorders, eating disorders, psychotic disorders, and autistic spectrum disorders (Bockting et al., 2006; Nuttbrock et al., 2010; Robinow, 2009). Mental health professionals should screen for these and other mental health concerns and incorporate

the identified concerns into the overall treatment plan. These concerns can be significant sources of distress and, if left untreated, can complicate the process of gender identity exploration and resolution of gender dysphoria (Bockting et al., 2006; Fraser, 2009a; Lev, 2009). Addressing these concerns can greatly facilitate the resolution of gender dysphoria, possible changes in gender role, the making of informed decisions about medical interventions, and improvements in quality of life.

Some clients may benefit from psychotropic medications to alleviate symptoms or treat coexisting mental health concerns. Mental health professionals are expected to recognize this and either provide pharmacotherapy or refer to a colleague who is qualified to do so. The presence of coexisting mental health concerns does not necessarily preclude possible changes in gender role or access to feminizing/masculinizing hormones or surgery; rather, these concerns need to be optimally managed prior to, or concurrent with, treatment of gender dysphoria. In addition, clients should be assessed for their ability to provide educated and informed consent for medical treatments.

Qualified mental health professionals are specifically trained to assess, diagnose, and treat (or refer to treatment for) these coexisting mental health concerns. Other health professionals with appropriate training in behavioral health, particularly when functioning as part of a multidisciplinary specialty team providing access to feminizing/masculinizing hormone therapy, may also screen for mental health concerns and, if indicated, provide referral for comprehensive assessment and treatment by a qualified mental health professional.

4. If Applicable, Assess Eligibility, Prepare, and Refer for Hormone Therapy

The *SOC* provide criteria to guide decisions regarding feminizing/masculinizing hormone therapy (outlined in section VIII and Appendix C). Mental health professionals can help clients who are considering hormone therapy to be both psychologically prepared (e.g., client has made a fully informed decision with clear and realistic expectations; is ready to receive the service in line with the overall treatment plan; has included family and community as appropriate) and practically prepared (e.g., has been evaluated by a physician to rule out or address medical contraindications to hormone use; has considered the psychosocial implications). If clients are of childbearing age, reproductive options (section IX) should be explored before initiating hormone therapy.

It is important for mental health professionals to recognize that decisions about hormones are first and foremost a client's decisions—as are all decisions regarding healthcare. However, mental health professionals have a responsibility to encourage, guide, and assist clients with making fully informed decisions and becoming adequately prepared. To best support their clients' decisions, mental health professionals need to have functioning working relationships with their clients and sufficient information about them. Clients should receive prompt and attentive evaluation, with the goal of alleviating their gender dysphoria and providing them with appropriate medical services.

Referral for feminizing/masculinizing hormone therapy

People may approach a specialized provider in any discipline to pursue feminizing/masculinizing hormone therapy. However, transgender health care is an interdisciplinary field, and coordination of care and referral among a client's overall care team is recommended.

Hormone therapy can be initiated with a referral from a qualified mental health professional. Alternatively, a health professional who is appropriately trained in behavioral health and competent in the assessment of gender dysphoria may assess eligibility, prepare, and refer the patient for hormone therapy, particularly in the absence of significant coexisting mental health concerns and when working in the context of a multidisciplinary specialty team. The referring health professional should provide documentation—in the chart and/or referral letter—of the patient's personal and treatment history, progress, and eligibility. Health professionals who recommend hormone therapy share the ethical and legal responsibility for that decision with the physician who provides the service.

The recommended content of the referral letter for feminizing/masculinizing hormone therapy is as follows:

1. The client's general identifying characteristics;

2. Results of the client's psychosocial assessment, including any diagnoses;

3. The duration of the referring health professional's relationship with the client, including the type of evaluation and therapy or counseling to date;

4. An explanation that the criteria for hormone therapy have been met, and a brief description of the clinical rationale for supporting the client's request for hormone therapy;

5. A statement that informed consent has been obtained from the patient;

6. A statement that the referring health professional is available for coordination of care and welcomes a phone call to establish this.

For providers working within a multidisciplinary specialty team, a letter may not be necessary; rather, the assessment and recommendation can be documented in the patient's chart.

5. If Applicable, Assess Eligibility, Prepare, and Refer for Surgery

The *SOC* also provide criteria to guide decisions regarding breast/chest surgery and genital surgery (outlined in section XI and Appendix C). Mental health professionals can help clients who are

considering surgery to be both psychologically prepared (e.g., has made a fully informed decision with clear and realistic expectations; is ready to receive the service in line with the overall treatment plan; has included family and community as appropriate) and practically prepared (e.g., has made an informed choice about a surgeon to perform the procedure; has arranged aftercare). If clients are of childbearing age, reproductive options (section IX) should be explored before undergoing genital surgery.

The *SOC* do not state criteria for other surgical procedures, such as feminizing or masculinizing facial surgery; however, mental health professionals can play an important role in helping their clients to make fully informed decisions about the timing and implications of such procedures in the context of the overall coming-out or transition process.

It is important for mental health professionals to recognize that decisions about surgery are first and foremost a client's decisions—as are all decisions regarding healthcare. However, mental health professionals have a responsibility to encourage, guide, and assist clients with making fully informed decisions and becoming adequately prepared. To best support their clients' decisions, mental health professionals need to have functioning working relationships with their clients and sufficient information about them. Clients should receive prompt and attentive evaluation, with the goal of alleviating their gender dysphoria and providing them with appropriate medical services.

Referral for surgery

Surgical treatments for gender dysphoria can be initiated by a referral (one or two, depending on the type of surgery) from a qualified mental health professional. The mental health professional provides documentation—in the chart and/or referral letter—of the patient's personal and treatment history, progress, and eligibility. Mental health professionals who recommend surgery share the ethical and legal responsibility for that decision with the surgeon.

- One referral from a qualified mental health professional is needed for breast/chest surgery (e.g., mastectomy, chest reconstruction, or augmentation mammoplasty).

- Two referrals—from qualified mental health professionals who have independently assessed the patient—are needed for genital surgery (i.e., hysterectomy/salpingo-oophorectomy, orchiectomy, genital reconstructive surgeries). If the first referral is from the patient's psychotherapist, the second referral should be from a person who has only had an evaluative role with the patient. Two separate letters, or one letter signed by both (e.g., if practicing within the same clinic) may be sent. Each referral letter, however, is expected to cover the same topics in the areas outlined below.

The recommended content of the referral letters for surgery is as follows:

1. The client's general identifying characteristics;
2. Results of the client's psychosocial assessment, including any diagnoses;
3. The duration of the mental health professional's relationship with the client, including the type of evaluation and therapy or counseling to date;
4. An explanation that the criteria for surgery have been met, and a brief description of the clinical rationale for supporting the patient's request for surgery;
5. A statement about the fact that informed consent has been obtained from the patient;
6. A statement that the mental health professional is available for coordination of care and welcomes a phone call to establish this.

For providers working within a multidisciplinary specialty team, a letter may not be necessary, rather, the assessment and recommendation can be documented in the patient's chart.

Relationship of Mental Health Professionals with Hormone-Prescribing Physicians, Surgeons, and Other Health Professionals

It is ideal for mental health professionals to perform their work and periodically discuss progress and obtain peer consultation from other professionals (both in mental health care and other health disciplines) who are competent in the assessment and treatment of gender dysphoria. The relationship among professionals involved in a client's health care should remain collaborative, with coordination and clinical dialogue taking place as needed. Open and consistent communication may be necessary for consultation, referral, and management of postoperative concerns.

Tasks Related to Psychotherapy

1. Psychotherapy Is Not an Absolute Requirement for Hormone Therapy and Surgery

A mental health screening and/or assessment as outlined above is needed for referral to hormonal and surgical treatments for gender dysphoria. In contrast, psychotherapy—although highly recommended—is not a requirement.

The *SOC* do not recommend a minimum number of psychotherapy sessions prior to hormone therapy or surgery. The reasons for this are multifaceted (Lev, 2009). First, a minimum number of sessions tends to be construed as a hurdle, which discourages the genuine opportunity for personal growth. Second, mental health professionals can offer important support to clients throughout all phases of exploration of gender identity, gender expression, and possible transition—not just prior to any possible medical interventions. Third, clients and their psychotherapists differ in their abilities to attain similar goals in a specified time period.

2. Goals of Psychotherapy for Adults with Gender Concerns

The general goal of psychotherapy is to find ways to maximize a person's overall psychological well-being, quality of life, and self-fulfillment. Psychotherapy is not intended to alter a person's gender identity; rather, psychotherapy can help an individual to explore gender concerns and find ways to alleviate gender dysphoria, if present (Bockting et al., 2006; Bockting & Coleman, 2007; Fraser, 2009a; Lev, 2004). Typically, the overarching treatment goal is to help transsexual, transgender, and gender-nonconforming individuals achieve long-term comfort in their gender identity expression, with realistic chances for success in their relationships, education, and work. For additional details, see Fraser (Fraser, 2009c).

Therapy may consist of individual, couple, family, or group psychotherapy, the latter being particularly important to foster peer support.

3. Psychotherapy for Transsexual, Transgender, and Gender-Nonconforming Clients, Including Counseling and Support for Changes in Gender Role

Finding a comfortable gender role is, first and foremost, a psychosocial process. Psychotherapy can be invaluable in assisting transsexual, transgender, and gender-nonconforming individuals with all of the following: (i) clarifying and exploring gender identity and role, (ii) addressing the impact of stigma and minority stress on one's mental health and human development, and (iii) facilitating a coming-out process (Bockting & Coleman, 2007; Devor, 2004; Lev, 2004), which for some individuals may include changes in gender role expression and the use of feminizing/masculinizing medical interventions.

Mental health professionals can provide support and promote interpersonal skills and resilience in individuals and their families as they navigate a world that often is ill-prepared to accommodate and respect transgender, transsexual, and gender-nonconforming people. Psychotherapy can also aid in alleviating any coexisting mental health concerns (e.g., anxiety, depression) identified during screening and assessment.

For transsexual, transgender, and gender-nonconforming individuals who plan to change gender roles permanently and make a social gender role transition, mental health professionals can facilitate the development of an individualized plan with specific goals and timelines. While the experience of changing one's gender role differs from person to person, the social aspects of the experience are usually challenging—often more so than the physical aspects. Because changing gender role can have profound personal and social consequences, the decision to do so should include an awareness of what the familial, interpersonal, educational, vocational, economic, and legal challenges are likely to be, so that people can function successfully in their gender role.

Many transsexual, transgender, and gender-nonconforming people will present for care without ever having been related to, or accepted in, the gender role that is most congruent with their gender identity. Mental health professionals can help these clients to explore and anticipate the implications of changes in gender role, and to pace the process of implementing these changes. Psychotherapy can provide a space for clients to begin to express themselves in ways that are congruent with their gender identity and, for some clients, overcome fears about changes in gender expression. Calculated risks can be taken outside of therapy to gain experience and build confidence in the new role. Assistance with coming out to family and community (friends, school, workplace) can be provided.

Other transsexual, transgender, and gender-nonconforming individuals will present for care already having acquired experience (minimal, moderate, or extensive) living in a gender role that differs from that associated with their birth-assigned sex. Mental health professionals can help these clients to identify and work through potential challenges and foster optimal adjustment as they continue to express changes in their gender role.

4. Family Therapy or Support for Family Members

Decisions about changes in gender role and medical interventions for gender dysphoria have implications for, not only clients, but also their families (Emerson & Rosenfeld, 1996; Fraser, 2009a; Lev, 2004). Mental health professionals can assist clients with making thoughtful decisions about communicating with family members and others about their gender identity and treatment decisions. Family therapy may include work with spouses or partners, as well as with children and other members of a client's extended family.

Clients may also request assistance with their relationships and sexual health. For example, they may want to explore their sexuality and intimacy-related concerns.

Family therapy might be offered as part of the client's individual therapy and, if clinically appropriate, by the same provider. Alternatively, referrals can be made to other therapists with relevant expertise

for working with family members or to sources of peer support (e.g., in-person or offline support networks of partners or families).

5. Follow-Up Care Throughout Life

Mental health professionals may work with clients and their families at many stages of their lives. Psychotherapy may be helpful at different times and for various issues throughout the life cycle.

6. E-Therapy, Online Counseling, or Distance Counseling

Online or e-therapy has been shown to be particularly useful for people who have difficulty accessing competent in-person psychotherapeutic treatment and who may experience isolation and stigma (Derrig-Palumbo & Zeine, 2005; Fenichel et al., 2004; Fraser, 2009b). By extrapolation, e-therapy may be a useful modality for psychotherapy with transsexual, transgender, and gender-nonconforming people. E-therapy offers opportunities for potentially enhanced, expanded, creative, and tailored delivery of services; however, as a developing modality it may also carry unexpected risk. Telemedicine guidelines are clear in some disciplines in some parts of the United States (Fraser, 2009b; Maheu, Pulier, Wilhelm, McMenamin, & Brown-Connolly, 2005) but not all; the international situation is even less well-defined (Maheu et al., 2005). Until sufficient evidence-based data on this use of e-therapy is available, caution in its use is advised.

Mental health professionals engaging in e-therapy are advised to stay current with their particular licensing board, professional association, and country's regulations, as well as the most recent literature pertaining to this rapidly evolving medium. A more thorough description of the potential uses, processes, and ethical concerns related to e-therapy has been published (Fraser, 2009b).

Other Tasks of Mental Health Professionals

1. Educate and Advocate on Behalf of Clients Within Their Community (Schools, Workplaces, Other Organizations) and Assist Clients with Making Changes in Identity Documents

Transsexual, transgender, and gender-nonconforming people may face challenges in their professional, educational, and other types of settings as they actualize their gender identity and expression (Lev, 2004, 2009). Mental health professionals can play an important role by educating people in these settings regarding gender nonconformity and by advocating on behalf of their clients (Currah, Juang, & Minter, 2006; Currah & Minter, 2000). This role may involve consultation

with school counselors, teachers, and administrators, human resources staff, personnel managers and employers, and representatives from other organizations and institutions. In addition, health providers may be called upon to support changes in a client's name and/or gender marker on identity documents such as passports, driver's licenses, birth certificates, and diplomas.

2. Provide Information and Referral for Peer Support

For some transsexual, transgender, and gender-nonconforming people, an experience in peer support groups may be more instructive regarding options for gender expression than anything individual psychotherapy could offer (Rachlin, 2002). Both experiences are potentially valuable, and all people exploring gender issues should be encouraged to participate in community activities, if possible. Resources for peer support and information should be made available.

Culture and Its Ramifications for Assessment and Psychotherapy

Health professionals work in enormously different environments across the world. Forms of distress that cause people to seek professional assistance in any culture are understood and classified by people in terms that are products of their own cultures (Frank & Frank, 1993). Cultural settings also largely determine how such conditions are understood by mental health professionals. Cultural differences related to gender identity and expression can affect patients, mental health professionals, and accepted psychotherapy practice. WPATH recognizes that the *SOC* have grown out of a Western tradition and may need to be adapted depending on the cultural context.

Ethical Guidelines Related to Mental Health Care

Mental health professionals need to be certified or licensed to practice in a given country according to that country's professional regulations (Fraser, 2009b; Pope & Vasquez, 2011). Professionals must adhere to the ethical codes of their professional licensing or certifying organizations in all of their work with transsexual, transgender, and gender-nonconforming clients.

Treatment aimed at trying to change a person's gender identity and lived gender expression to become more congruent with sex assigned at birth has been attempted in the past (Gelder & Marks, 1969; Greenson, 1964), yet without success, particularly in the long-term (Cohen-Kettenis & Kuiper, 1984; Pauly, 1965). Such treatment is no longer considered ethical.

If mental health professionals are uncomfortable with, or inexperienced in, working with transsexual, transgender, and gender-nonconforming individuals and their families, they should refer clients to a competent provider or, at minimum, consult with an expert peer. If no local practitioners are available, consultation may be done via telehealth methods, assuming local requirements for distance consultation are met.

Issues of Access to Care

Qualified mental health professionals are not universally available; thus, access to quality care might be limited. WPATH aims to improve access and provides regular continuing education opportunities to train professionals from various disciplines to provide quality, transgender-specific health care. Providing mental health care from a distance through the use of technology may be one way to improve access (Fraser, 2009b).

In many places around the world, access to health care for transsexual, transgender, and gender-nonconforming people is also limited by a lack of health insurance or other means to pay for needed care. WPATH urges health insurance companies and other third-party payers to cover the medically necessary treatments to alleviate gender dysphoria (American Medical Association, 2008; Anton, 2009; The World Professional Association for Transgender Health, 2008).

When faced with a client who is unable to access services, referral to available peer support resources (offline and online) is recommended. Finally, harm-reduction approaches might be indicated to assist clients with making healthy decisions to improve their lives.

VIII
Hormone Therapy

Medical Necessity of Hormone Therapy

Feminizing/masculinizing hormone therapy—the administration of exogenous endocrine agents to induce feminizing or masculinizing changes—is a medically necessary intervention for many transsexual, transgender, and gender-nonconforming individuals with gender dysphoria

(Newfield, Hart, Dibble, & Kohler, 2006; Pfäfflin & Junge, 1998). Some people seek maximum feminization/masculinization, while others experience relief with an androgynous presentation resulting from hormonal minimization of existing secondary sex characteristics (Factor & Rothblum, 2008). Evidence for the psychosocial outcomes of hormone therapy is summarized in Appendix D.

Hormone therapy must be individualized based on a patient's goals, the risk/benefit ratio of medications, the presence of other medical conditions, and consideration of social and economic issues. Hormone therapy can provide significant comfort to patients who do not wish to make a social gender role transition or undergo surgery, or who are unable to do so (Meyer III, 2009). Hormone therapy is a recommended criterion for some, but not all, surgical treatments for gender dysphoria (see section XI and Appendix C).

Criteria for Hormone Therapy

Initiation of hormone therapy may be undertaken after a psychosocial assessment has been conducted and informed consent has been obtained by a qualified health professional, as outlined in section VII of the *SOC*. A referral is required from the mental health professional who performed the assessment, unless the assessment was done by a hormone provider who is also qualified in this area.

The criteria for hormone therapy are as follows:

1. Persistent, well-documented gender dysphoria;
2. Capacity to make a fully informed decision and to consent for treatment;
3. Age of majority in a given country (if younger, follow the *SOC* outlined in section VI);
4. If significant medical or mental health concerns are present, they must be reasonably well-controlled.

As noted in section VII of the *SOC*, the presence of coexisting mental health concerns does not necessarily preclude access to feminizing/masculinizing hormones; rather, these concerns need to be managed prior to, or concurrent with, treatment of gender dysphoria.

In selected circumstances, it can be acceptable practice to provide hormones to patients who have not fulfilled these criteria. Examples include facilitating the provision of monitored therapy using hormones of known quality as an alternative to illicit or unsupervised hormone use or to patients

who have already established themselves in their affirmed gender and who have a history of prior hormone use. It is unethical to deny availability or eligibility for hormone therapy solely on the basis of blood seropositivity for blood-borne infections such as HIV or hepatitis B or C.

In rare cases, hormone therapy may be contraindicated due to serious individual health conditions. Health professionals should assist these patients with accessing nonhormonal interventions for gender dysphoria. A qualified mental health professional familiar with the patient is an excellent resource in these circumstances.

Informed Consent

Feminizing/masculinizing hormone therapy may lead to irreversible physical changes. Thus, hormone therapy should be provided only to those who are legally able to provide informed consent. This includes people who have been declared by a court to be emancipated minors, incarcerated people, and cognitively impaired people who are considered competent to participate in their medical decisions (Bockting et al., 2006). Providers should document in the medical record that comprehensive information has been provided and understood about all relevant aspects of the hormone therapy, including both possible benefits and risks and the impact on reproductive capacity.

Relationship Between the *Standards of Care* and Informed Consent Model Protocols

A number of community health centers in the United States have developed protocols for providing hormone therapy based on an approach that has become known as the Informed Consent Model (Callen Lorde Community Health Center, 2000, 2011; Fenway Community Health Transgender Health Program, 2007; Tom Waddell Health Center, 2006). These protocols are consistent with the guidelines presented in the WPATH *Standards of Care, Version 7*. The *SOC* are flexible clinical guidelines; they allow for tailoring of interventions to the needs of the individual receiving services and for tailoring of protocols to the approach and setting in which these services are provided (Ehrbar & Gorton, 2010).

Obtaining informed consent for hormone therapy is an important task of providers to ensure that patients understand the psychological and physical benefits and risks of hormone therapy, as well as its psychosocial implications. Providers prescribing the hormones or health professionals recommending the hormones should have the knowledge and experience to assess gender

dysphoria. They should inform individuals of the particular benefits, limitations, and risks of hormones, given the patient's age, previous experience with hormones, and concurrent physical or mental health concerns.

Screening for and addressing acute or current mental health concerns is an important part of the informed consent process. This may be done by a mental health professional or by an appropriately trained prescribing provider (see section VII of the *SOC*). The same provider or another appropriately trained member of the health care team (e.g., a nurse) can address the psychosocial implications of taking hormones when necessary (e.g., the impact of masculinization/feminization on how one is perceived and its potential impact on relationships with family, friends, and coworkers). If indicated, these providers will make referrals for psychotherapy and for the assessment and treatment of coexisting mental health concerns such as anxiety or depression.

The difference between the Informed Consent Model and *SOC, Version 7,* is that the *SOC* puts greater emphasis on the important role that mental health professionals can play in alleviating gender dysphoria and facilitating changes in gender role and psychosocial adjustment. This may include a comprehensive mental health assessment and psychotherapy, when indicated. In the Informed Consent Model, the focus is on obtaining informed consent as the threshold for the initiation of hormone therapy in a multidisciplinary, harm-reduction environment. Less emphasis is placed on the provision of mental health care until the patient requests it, unless significant mental health concerns are identified that would need to be addressed before hormone prescription.

Physical Effects of Hormone Therapy

Feminizing/masculinizing hormone therapy will induce physical changes that are more congruent with a patient's gender identity.

- In FtM patients, the following physical changes are expected to occur: deepened voice, clitoral enlargement (variable), growth in facial and body hair, cessation of menses, atrophy of breast tissue, and decreased percentage of body fat compared to muscle mass.

- In MtF patients, the following physical changes are expected to occur: breast growth (variable), decreased erectile function, decreased testicular size, and increased percentage of body fat compared to muscle mass.

Most physical changes, whether feminizing or masculinizing, occur over the course of two years. The amount of physical change and the exact timeline of effects can be highly variable. Tables 1a and 1b outline the approximate time course of these physical changes.

TABLE 1A: EFFECTS AND EXPECTED TIME COURSE OF MASCULINIZING HORMONES [A]

Effect	Expected onset[B]	Expected maximum effect[B]
Skin oiliness/acne	1–6 months	1–2 years
Facial/body hair growth	3–6 months	3–5 years
Scalp hair loss	>12 months[C]	Variable
Increased muscle mass/strength	6–12 months	2–5 years[D]
Body fat redistribution	3–6 months	2–5 years
Cessation of menses	2–6 months	n/a
Clitoral enlargement	3–6 months	1–2 years
Vaginal atrophy	3–6 months	1–2 years
Deepened voice	3–12 months	1–2 years

A Adapted with permission from Hembree et al.(2009). Copyright 2009, The Endocrine Society.
B Estimates represent published and unpublished clinical observations.
C Highly dependent on age and inheritance; may be minimal.
D Significantly dependent on amount of exercise.

TABLE 1B: EFFECTS AND EXPECTED TIME COURSE OF FEMINIZING HORMONES [A]

Effect	Expected onset[B]	Expected maximum effect[B]
Body fat redistribution	3–6 months	2–5 years
Decreased muscle mass/ strength	3–6 months	1–2 years[C]
Softening of skin/decreased oiliness	3–6 months	Unknown
Decreased libido	1–3 months	1–2 years
Decreased spontaneous erections	1–3 months	3–6 months
Male sexual dysfunction	Variable	Variable
Breast growth	3–6 months	2–3 years
Decreased testicular volume	3–6 months	2–3 years
Decreased sperm production	Variable	Variable
Thinning and slowed growth of body and facial hair	6–12 months	> 3 years[D]
Male pattern baldness	No regrowth, loss stops 1–3 months	1–2 years

[A] Adapted with permission from Hembree et al. (2009). Copyright 2009, The Endocrine Society.
[B] Estimates represent published and unpublished clinical observations.
[C] Significantly dependent on amount of exercise.
[D] Complete removal of male facial and body hair requires electrolysis, laser treatment, or both.

The degree and rate of physical effects depends in part on the dose, route of administration, and medications used, which are selected in accordance with a patient's specific medical goals (e.g., changes in gender role expression, plans for sex reassignment) and medical risk profile. There is no current evidence that response to hormone therapy—with the possible exception of voice deepening in FtM persons—can be reliably predicted based on age, body habitus, ethnicity, or family appearance. All other factors being equal, there is no evidence to suggest that any medically approved type or method of administering hormones is more effective than any other in producing the desired physical changes.

Risks of Hormone Therapy

All medical interventions carry risks. The likelihood of a serious adverse event is dependent on numerous factors: the medication itself, dose, route of administration, and a patient's clinical characteristics (age, comorbidities, family history, health habits). It is thus impossible to predict whether a given adverse effect will happen in an individual patient.

The risks associated with feminizing/masculinizing hormone therapy for the transsexual, transgender, and gender-nonconforming population as a whole are summarized in Table 2. Based on the level of evidence, risks are categorized as follows: (i) likely increased risk with hormone therapy, (ii) possibly increased risk with hormone therapy, or (iii) inconclusive or no increased risk. Items in the last category include those that may present risk, but for which the evidence is so minimal that no clear conclusion can be reached.

Additional detail about these risks can be found in Appendix B, which is based on two comprehensive, evidence-based literature reviews of masculinizing/feminizing hormone therapy (Feldman & Safer, 2009; Hembree et al., 2009), along with a large cohort study (Asscheman et al., 2011). These reviews can serve as detailed references for providers, along with other widely recognized, published clinical materials (Dahl, Feldman, Goldberg, & Jaberi, 2006; Ettner, Monstrey, & Eyler, 2007).

TABLE 2: RISKS ASSOCIATED WITH HORMONE THERAPY. BOLDED ITEMS ARE CLINICALLY SIGNIFICANT

Risk Level	Feminizing hormones	Masculinizing hormones
Likely increased risk	Venous thromboembolic disease[A] Gallstones Elevated liver enzymes Weight gain Hypertriglyceridemia	Polycythemia Weight gain Acne Androgenic alopecia (balding) Sleep apnea
Likely increased risk with presence of additional risk factors[B]	Cardiovascular disease	
Possible increased risk	Hypertension Hyperprolactinemia or prolactinoma	Elevated liver enzymes Hyperlipidemia
Possible increased risk with presence of additional risk factors[B]	Type 2 diabetes[A]	Destabilization of certain psychiatric disorders[C] Cardiovascular disease Hypertension Type 2 diabetes
No increased risk or inconclusive	Breast cancer	Loss of bone density Breast cancer Cervical cancer Ovarian cancer Uterine cancer

* **Note:** Risk is greater with oral estrogen administration than with transdermal estrogen administration.
A Risk is greater with oral estrogen administration than with transdermal estrogen administration.
B Additional risk factors include age.
C Includes bipolar, schizoaffective, and other disorders that may include manic or psychotic symptoms. This adverse event appears to be associated with higher doses or supraphysiologic blood levels of testosterone.

Competency of Hormone-Prescribing Physicians, Relationship with Other Health Professionals

Feminizing/masculinizing hormone therapy is best undertaken in the context of a complete approach to health care that includes comprehensive primary care and a coordinated approach to psychosocial issues (Feldman & Safer, 2009). While psychotherapy or ongoing counseling is not required for the initiation of hormone therapy, if a therapist is involved, then regular communication among health professionals is advised (with the patient's consent) to ensure that the transition process is going well, both physically and psychosocially.

With appropriate training, feminizing/masculinizing hormone therapy can be managed by a variety of providers, including nurse practitioners, physician assistants, and primary care physicians (Dahl et al., 2006). Medical visits relating to hormone maintenance provide an opportunity to deliver broader care to a population that is often medically underserved (Clements, Wilkinson, Kitano, & Marx, 1999; Feldman, 2007; Xavier, 2000). Many of the screening tasks and management of comorbidities associated with long-term hormone use, such as cardiovascular risk factors and cancer screening, fall more uniformly within the scope of primary care rather than specialist care (American Academy of Family Physicians, 2005; Eyler, 2007; World Health Organization, 2008), particularly in locations where dedicated gender teams or specialized physicians are not available.

Given the multidisciplinary needs of transsexual, transgender, and gender-nonconforming people seeking hormone therapy, as well as the difficulties associated with fragmentation of care in general (World Health Organization, 2008), WPATH strongly encourages the increased training and involvement of primary care providers in the area of feminizing/masculinizing hormone therapy. If hormones are prescribed by a specialist, there should be close communication with the patient's primary care provider. Conversely, an experienced hormone provider or endocrinologist should be involved if the primary care physician has no experience with this type of hormone therapy, or if the patient has a pre-existing metabolic or endocrine disorder that could be affected by endocrine therapy.

While formal training programs in transgender medicine do not yet exist, hormone providers have a responsibility to obtain appropriate knowledge and experience in this field. Clinicians can increase their experience and comfort in providing feminizing/masculinizing hormone therapy by co-managing care or consulting with a more experienced provider, or by providing more limited types of hormone therapy before progressing to initiation of hormone therapy. Because this field of medicine is evolving, clinicians should become familiar and keep current with the medical literature, and discuss emerging issues with colleagues. Such discussions might occur through networks established by WPATH and other national/local organizations.

Responsibilities of Hormone-Prescribing Physicians

In general, clinicians who prescribe hormone therapy should engage in the following tasks:

1. Perform an initial evaluation that includes discussion of a patient's physical transition goals, health history, physical examination, risk assessment, and relevant laboratory tests.

2. Discuss with patients the expected effects of feminizing/masculinizing medications and the possible adverse health effects. These effects can include a reduction in fertility (Feldman & Safer, 2009; Hembree et al., 2009). Therefore, reproductive options should be discussed with patients before starting hormone therapy (see section IX).

3. Confirm that patients have the capacity to understand the risks and benefits of treatment and are capable of making an informed decision about medical care.

4. Provide ongoing medical monitoring, including regular physical and laboratory examination to monitor hormone effectiveness and side effects.

5. Communicate as needed with a patient's primary care provider, mental health professional, and surgeon.

6. If needed, provide patients with a brief written statement indicating that they are under medical supervision and care that includes feminizing/masculinizing hormone therapy. Particularly during the early phases of hormone treatment, a patient may wish to carry this statement at all times to help prevent difficulties with the police and other authorities.

Depending on the clinical situation for providing hormones (see below), some of these responsibilities are less relevant. Thus, the degree of counseling, physical examinations, and laboratory evaluations should be individualized to a patient's needs.

Clinical Situations for Hormone Therapy

There are circumstances in which clinicians may be called upon to provide hormones without necessarily initiating or maintaining long-term feminizing/masculinizing hormone therapy. By acknowledging these different clinical situations (see below, from least to highest level of complexity), it may be possible to involve clinicians in feminizing/masculinizing hormone therapy who might not otherwise feel able to offer this treatment.

1. Bridging

Whether prescribed by another clinician or obtained through other means (e.g., purchased over the Internet), patients may present for care already on hormone therapy. Clinicians can provide a limited (1–6 month) prescription for hormones while helping patients find a provider who can prescribe long-term hormone therapy. Providers should assess a patient's current regimen for safety and drug interactions and substitute safer medications or doses when indicated (Dahl et al., 2006; Feldman & Safer, 2009). If hormones were previously prescribed, medical records should be requested (with the patient's permission) to obtain the results of baseline examinations and laboratory tests and any adverse events. Hormone providers should also communicate with any mental health professional who is currently involved in a patient's care. If a patient has never had a psychosocial assessment as recommended by the *SOC* (see section VII), clinicians should refer the patient to a qualified mental health professional if appropriate and feasible (Feldman & Safer, 2009). Providers who prescribe bridging hormones need to work with patients to establish limits as to the duration of bridging therapy.

2. Hormone Therapy Following Gonad Removal

Hormone replacement with estrogen or testosterone is usually continued lifelong after an oophorectomy or orchiectomy, unless medical contraindications arise. Because hormone doses are often decreased after these surgeries (Basson, 2001; Levy, Crown, & Reid, 2003; Moore, Wisniewski, & Dobs, 2003) and only adjusted for age and comorbid health concerns, hormone management in this situation is quite similar to hormone replacement in any hypogonadal patient.

3. Hormone Maintenance Prior to Gonad Removal

Once patients have achieved maximal feminizing/masculinizing benefits from hormones (typically two or more years), they remain on a maintenance dose. The maintenance dose is then adjusted for changes in health conditions, aging, or other considerations such as lifestyle changes (Dahl et al., 2006). When a patient on maintenance hormones presents for care, the provider should assess the patient's current regimen for safety and drug interactions and substitute safer medications or doses when indicated. The patient should continue to be monitored by physical examinations and laboratory testing on a regular basis, as outlined in the literature (Feldman & Safer, 2009; Hembree et al., 2009). The dose and form of hormones should be revisited regularly with any changes in the patient's health status and available evidence on the potential long-term risks of hormones (See *Hormone Regimens,* below).

4. Initiating Hormonal Feminization/Masculinization

This clinical situation requires the greatest commitment in terms of provider time and expertise. Hormone therapy must be individualized based on a patient's goals, the risk/benefit ratio of medications, the presence of other medical conditions, and consideration of social and economic issues. Although a wide variety of hormone regimens have been published (Dahl et al., 2006; Hembree et al., 2009; Moore et al., 2003), there are no published reports of randomized clinical trials comparing safety and efficacy. Despite this variation, a reasonable framework for initial risk assessment and ongoing monitoring of hormone therapy can be constructed, based on the efficacy and safety evidence presented above.

Risk Assessment and Modification for Initiating Hormone Therapy

The initial evaluation for hormone therapy assesses a patient's clinical goals and risk factors for hormone-related adverse events. During the risk assessment, the patient and clinician should develop a plan for reducing risks wherever possible, either prior to initiating therapy or as part of ongoing harm reduction.

All assessments should include a thorough physical exam, including weight, height, and blood pressure. The need for breast, genital, and rectal exams, which are sensitive issues for most transsexual, transgender, and gender-nonconforming patients, should be based on individual risks and preventive health care needs (Feldman & Goldberg, 2006; Feldman, 2007).

Preventive Care

Hormone providers should address preventive health care with patients, particularly if a patient does not have a primary care provider. Depending on a patient's age and risk profile, there may be appropriate screening tests or exams for conditions affected by hormone therapy. Ideally, these screening tests should be carried out prior to the start of hormone therapy.

Risk Assessment and Modification for Feminizing Hormone Therapy (MtF)

There are no absolute contraindications to feminizing therapy per se, but absolute contraindications exist for the different feminizing agents, particularly estrogen. These include previous venous thrombotic events related to an underlying hypercoagulable condition, history of estrogen-sensitive neoplasm, and end-stage chronic liver disease (Gharib et al., 2005).

Other medical conditions, as noted in Table 2 and Appendix B, can be exacerbated by estrogen or androgen blockade, and therefore should be evaluated and reasonably well controlled prior to starting hormone therapy (Feldman & Safer, 2009; Hembree et al., 2009). Clinicians should particularly attend to tobacco use, as it is associated with increased risk of venous thrombosis, which is further increased with estrogen use. Consultation with a cardiologist may be advisable for patients with known cardio- or cerebrovascular disease.

Baseline laboratory values are important to both assess initial risk and evaluate possible future adverse events. Initial labs should be based on the risks of feminizing hormone therapy outlined in Table 2, as well as individual patient risk factors, including family history. Suggested initial lab panels have been published (Feldman & Safer, 2009; Hembree et al., 2009). These can be modified for patients or health care systems with limited resources, and in otherwise healthy patients.

Risk Assessment and Modification for Masculinizing Hormone Therapy (FtM)

Absolute contraindications to testosterone therapy include pregnancy, unstable coronary artery disease, and untreated polycythemia with a hematocrit of 55% or higher (Carnegie, 2004). Because the aromatization of testosterone to estrogen may increase risk in patients with a history of breast or other estrogen dependent cancers (Moore et al., 2003), consultation with an oncologist may be indicated prior to hormone use. Comorbid conditions likely to be exacerbated by testosterone use should be evaluated and treated, ideally prior to starting hormone therapy (Feldman & Safer, 2009; Hembree et al., 2009). Consultation with a cardiologist may be advisable for patients with known cardio- or cerebrovascular disease. (Dhejne et al., 2011).

An increased prevalence of polycystic ovarian syndrome (PCOS) has been noted among FtM patients even in the absence of testosterone use (Baba et al., 2007; Balen, Schachter, Montgomery, Reid, & Jacobs, 1993; Bosinski et al., 1997). While there is no evidence that PCOS is related to the development of a transsexual, transgender, or gender-nonconforming identity, PCOS is associated with increased risk of diabetes, cardiac disease, high blood pressure, and ovarian and endometrial cancers (Cattrall & Healy, 2004). Signs and symptoms of PCOS should be evaluated prior to initiating testosterone therapy, as testosterone may affect many of these conditions. Testosterone can affect the developing fetus (*Physicians' Desk Reference,* 2010), and patients at risk of becoming pregnant require highly effective birth control.

Baseline laboratory values are important to both assess initial risk and evaluate possible future adverse events. Initial labs should be based on the risks of masculinizing hormone therapy outlined in Table 2, as well as individual patient risk factors, including family history. Suggested initial lab panels have been published (Feldman & Safer, 2009; Hembree et al., 2009). These can be modified for patients or health care systems with limited resources, and in otherwise healthy patients.

Clinical Monitoring During Hormone Therapy for Efficacy and Adverse Events

The purpose of clinical monitoring during hormone use is to assess the degree of feminization/masculinization and the possible presence of adverse effects of medication. However, as with the monitoring of any long-term medication, monitoring should take place in the context of comprehensive health care. Suggested clinical monitoring protocols have been published (Feldman & Safer, 2009; Hembree et al., 2009). Patients with comorbid medical conditions may need to be monitored more frequently. Healthy patients in geographically remote or resource-poor areas may be able to use alternative strategies, such as telehealth, or cooperation with local providers such as nurses and physician assistants. In the absence of other indications, health professionals may prioritize monitoring for those risks that are either likely to be increased by hormone therapy or possibly increased by hormone therapy but clinically serious in nature.

Efficacy and Risk Monitoring During Feminizing Hormone Therapy (MtF)

The best assessment of hormone efficacy is clinical response: Is a patient developing a feminized body while minimizing masculine characteristics, consistent with that patient's gender goals? In order to more rapidly predict the hormone dosages that will achieve clinical response, one can measure testosterone levels for suppression below the upper limit of the normal female range and estradiol levels within a premenopausal female range but well below supraphysiologic levels (Feldman & Safer, 2009; Hembree et al., 2009).

Monitoring for adverse events should include both clinical and laboratory evaluation. Follow-up should include careful assessment for signs of cardiovascular impairment and venous thromboembolism (VTE) through measurement of blood pressure, weight, and pulse; heart and lung exams; and examination of the extremities for peripheral edema, localized swelling, or pain (Feldman & Safer, 2009). Laboratory monitoring should be based on the risks of hormone therapy described above, a patient's individual comorbidities and risk factors, and the specific hormone regimen itself. Specific lab-monitoring protocols have been published (Feldman & Safer, 2009; Hembree et al., 2009).

Efficacy and Risk Monitoring During Masculinizing Hormone Therapy (FtM)

The best assessment of hormone efficacy is clinical response: Is a patient developing a masculinized body while minimizing feminine characteristics, consistent with that patient's gender goals? Clinicians can achieve a good clinical response with the least likelihood of adverse events by maintaining testosterone levels within the normal male range while avoiding supraphysiological

levels (Dahl et al., 2006; Hembree et al., 2009). For patients using intramuscular (IM) testosterone cypionate or enanthate, some clinicians check trough levels while others prefer midcycle levels (Dahl et al., 2006; Hembree et al., 2009; Tangpricha, Turner, Malabanan, & Holick, 2001; Tangpricha, Ducharme, Barber, & Chipkin, 2003).

Monitoring for adverse events should include both clinical and laboratory evaluation. Follow-up should include careful assessment for signs and symptoms of excessive weight gain, acne, uterine break-through bleeding, and cardiovascular impairment, as well as psychiatric symptoms in at-risk patients. Physical examinations should include measurement of blood pressure, weight, and pulse; and heart, lung, and skin exams (Feldman & Safer, 2009). Laboratory monitoring should be based on the risks of hormone therapy described above, a patient's individual comorbidities and risk factors, and the specific hormone regimen itself. Specific lab monitoring protocols have been published (Feldman & Safer, 2009; Hembree et al., 2009).

Hormone Regimens

To date, no controlled clinical trials of any feminizing/masculinizing hormone regimen have been conducted to evaluate safety or efficacy in producing physical transition. As a result, wide variation in doses and types of hormones have been published in the medical literature (Moore et al., 2003; Tangpricha et al., 2003; van Kesteren, Asscheman, Megens, & Gooren, 1997). In addition, access to particular medications may be limited by a patient's geographical location and/or social or econonomic situations. For these reasons, WPATH does not describe or endorse a particular feminizing/masculinizing hormone regimen. Rather, the medication classes and routes of administration used in most published regimens are broadly reviewed.

As outlined above, there are demonstrated safety differences in individual elements of various regimens. The Endocrine Society Guidelines (Hembree et al., 2009) and Feldman and Safer (2009) provide specific guidance regarding the types of hormones and suggested dosing to maintain levels within physiologic ranges for a patient's desired gender expression (based on goals of full feminization/masculinization). It is strongly recommend that hormone providers regularly review the literature for new information and use those medications that safely meet individual patient needs with available local resources.

Regimens for Feminizing Hormone Therapy (MtF)

Estrogen

Use of oral estrogen, and specifically ethinyl estradiol, appears to increase the risk of VTE. Because of this safety concern, ethinyl estradiol is not recommended for feminizing hormone therapy. Transdermal estrogen is recommended for those patients with risks factors for VTE. The risk of adverse events increases with higher doses, particular doses resulting in supraphysiologic levels (Hembree et al., 2009). Patients with co-morbid conditions that can be affected by estrogen should avoid oral estrogen if possible and be started at lower levels. Some patients may not be able to safely use the levels of estrogen needed to get the desired results. This possibility needs to be discussed with patients well in advance of starting hormone therapy.

Androgen-reducing medications ("anti-androgens")

A combination of estrogen and "anti-androgens" is the most commonly studied regimen for feminization. Androgen-reducing medications, from a variety of classes of drugs, have the effect of reducing either endogenous testosterone levels or testosterone activity, and thus diminishing masculine characteristics such as body hair. They minimize the dosage of estrogen needed to suppress testosterone, thereby reducing the risks associated with high-dose exogenous estrogen (Prior, Vigna, Watson, Diewold, & Robinow, 1986; Prior, Vigna, & Watson, 1989).

Common anti-androgens include the following:

- Spironolactone, an antihypertensive agent, directly inhibits testosterone secretion and androgen binding to the androgen receptor. Blood pressure and electrolytes need to be monitored because of the potential for hyperkalemia.

- Cyproterone acetate is a progestational compound with anti-androgenic properties. This medication is not approved in the United States because of concerns over potential hepatotoxicity, but it is widely used elsewhere (De Cuypere et al., 2005).

- GnRH agonists (e.g., goserelin, buserelin, triptorelin) are neurohormones that block the gonadtropin-releasing hormone receptor, thus blocking the release of follicle stimulating hormone and luteinizing hormone. This leads to highly effective gonadal blockade. However, these medications are expensive and only available as injectables or implants.

- 5-alpha reductase inhibitors (finasteride and dutasteride) block the conversion of testosterone to the more active agent, 5-alpha-dihydrotestosterone. These medications have beneficial effects on scalp hair loss, body hair growth, sebaceous glands, and skin consistency.

Cyproterone and spironolactone are the most commonly used anti-androgens and are likely the most cost-effective.

Progestins

With the exception of cyproterone, the inclusion of progestins in feminizing hormone therapy is controversial (Oriel, 2000). Because progestins play a role in mammary development on a cellular level, some clinicians believe that these agents are necessary for full breast development (Basson & Prior, 1998; Oriel, 2000). However, a clinical comparison of feminization regimens with and without progestins found that the addition of progestins neither enhanced breast growth nor lowered serum levels of free testosterone (Meyer et al., 1986). There are concerns regarding potential adverse effects of progestins, including depression, weight gain, and lipid changes (Meyer et al., 1986; Tangpricha et al., 2003). Progestins (especially medroxyprogesterone) are also suspected to increase breast cancer risk and cardiovascular risk in women (Rossouw et al., 2002). Micronized progesterone may be better tolerated and have a more favorable impact on the lipid profile than medroxyprogesterone does (de Lignières, 1999; Fitzpatrick, Pace, & Wiita, 2000).

Regimens for Masculinizing Hormone Therapy (FtM)

Testosterone

Testosterone generally can be given orally, transdermally, or parenterally (IM), although buccal and implantable preparations are also available. Oral testosterone undecanoate, available outside the United States, results in lower serum testosterone levels than nonoral preparations and has limited efficacy in suppressing menses (Feldman, 2005, April; Moore et al., 2003). Because intramuscular testosterone cypionate or enanthate are often administered every 2–4 weeks, some patients may notice cyclic variation in effects (e.g., fatigue and irritability at the end of the injection cycle, aggression or expansive mood at the beginning of the injection cycle), as well as more time outside the normal physiologic levels (Jockenhövel, 2004). This may be mitigated by using a lower but more frequent dosage schedule or by using a daily transdermal preparation (Dobs et al., 1999; Jockenhövel, 2004; Nieschlag et al., 2004). Intramuscular testosterone undecanoate (not currently available in the United States) maintains stable, physiologic testosterone levels over approximately 12 weeks and has been effective in both the setting of hypogonadism and in FtM individuals (Mueller, Kiesewetter, Binder, Beckmann, & Dittrich, 2007; Zitzmann, Saad, & Nieschlag, 2006). There is evidence that transdermal and intramuscular testosterone achieve similar masculinizing results, although the timeframe may be somewhat slower with transdermal preparations (Feldman, 2005, April). Especially as patients age, the goal is to use the lowest dose needed to maintain the desired clinical result, with appropriate precautions being made to maintain bone density.

Other agents

Progestins, most commonly medroxyprogesterone, can be used for a short period of time to assist with menstrual cessation early in hormone therapy. GnRH agonists can be used similarly, as well as for refractory uterine bleeding in patients without an underlying gynecological abnormality.

Bioidentical and Compounded Hormones

As discussion surrounding the use of bioidentical hormones in postmenopausal hormone replacement has heightened, interest has also increased in the use of similar compounds in feminizing/masculinizing hormone therapy. There is no evidence that custom compounded bioidentical hormones are safer or more effective than government agency-approved bioidentical hormones (Sood, Shuster, Smith, Vincent, & Jatoi, 2011). Therefore, it has been advised by the North American Menopause Society (2010) and others to assume that, whether the hormone is from a compounding pharmacy or not, if the active ingredients are similar, it should have a similar side-effect profile. WPATH concurs with this assessment.

IX
Reproductive Health

Many transgender, transsexual, and gender-nonconforming people will want to have children. Because feminizing/masculinizing hormone therapy limits fertility (Darney, 2008; Zhang, Gu, Wang, Cui, & Bremner, 1999), it is desirable for patients to make decisions concerning fertility before starting hormone therapy or undergoing surgery to remove/alter their reproductive organs. Cases are known of people who received hormone therapy and genital surgery and later regretted their inability to parent genetically related children (De Sutter, Kira, Verschoor, & Hotimsky, 2002).

Health care professionals—including mental health professionals recommending hormone therapy or surgery, hormone-prescribing physicians, and surgeons—should discuss reproductive options with patients prior to initiation of these medical treatments for gender dysphoria. These discussions should occur even if patients are not interested in these issues at the time of treatment, which may be more common for younger patients (De Sutter, 2009). Early discussions are desirable, but not always possible. If an individual has not had complete sex reassignment surgery, it may be possible to stop hormones long enough for natal hormones to recover, allowing

the production of mature gametes (Payer, Meyer, & Walker, 1979; Van den Broecke, Van der Elst, Liu, Hovatta, & Dhont, 2001).

Besides debate and opinion papers, very few research papers have been published on the reproductive health issues of individuals receiving different medical treatments for gender dysphoria. Another group who faces the need to preserve reproductive function in light of loss or damage to their gonads are people with malignancies that require removal of reproductive organs or use of damaging radiation or chemotherapy. Lessons learned from that group can be applied to people treated for gender dysphoria.

MtF patients, especially those who have not already reproduced, should be informed about sperm-preservation options and encouraged to consider banking their sperm prior to hormone therapy. In a study examining testes that were exposed to high-dose estrogen (Payer et al., 1979), findings suggest that stopping estrogen may allow the testes to recover. In an article reporting on the opinions of MtF individuals towards sperm freezing (De Sutter et al., 2002), the vast majority of 121 survey respondents felt that the availability of freezing sperm should be discussed and offered by the medical world. Sperm should be collected before hormone therapy or after stopping the therapy until the sperm count rises again. Cryopreservation should be discussed even if there is poor semen quality. In adults with azoospermia, a testicular biopsy with subsequent cryopreservation of biopsied material for sperm is possible, but may not be successful.

Reproductive options for FtM patients might include oocyte (egg) or embryo freezing. The frozen gametes and embryo could later be used with a surrogate woman to carry to pregnancy. Studies of women with polycystic ovarian disease suggest that the ovary can recover in part from the effects of high testosterone levels (Hunter & Sterrett, 2000). Stopping the testosterone briefly might allow for ovaries to recover enough to release eggs; success likely depends on the patient's age and duration of testosterone treatment. While not systematically studied, some FtM individuals are doing exactly that, and some have been able to become pregnant and deliver children (More, 1998).

Patients should be advised that these techniques are not available everywhere and can be very costly. Transsexual, transgender, and gender-nonconforming people should not be refused reproductive options for any reason.

A special group of individuals are prepubertal or pubertal adolescents who will never develop reproductive function in their natal sex due to blockers or cross-gender hormones. At this time there is no technique for preserving function from the gonads of these individuals.

X

Voice and Communication Therapy

Communication, both verbal and nonverbal, is an important aspect of human behavior and gender expression. Transsexual, transgender, and gender-nonconforming people might seek the assistance of a voice and communication specialist to develop vocal characteristics (e.g., pitch, intonation, resonance, speech rate, phrasing patterns) and non-verbal communication patterns (e.g., gestures, posture/movement, facial expressions) that facilitate comfort with their gender identity. Voice and communication therapy may help to alleviate gender dysphoria and be a positive and motivating step towards achieving one's goals for gender role expression.

Competency of Voice and Communication Specialists Working with Transsexual, Transgender, and Gender-Nonconforming Clients

Specialists may include speech-language pathologists, speech therapists, and speech-voice clinicians. In most countries the professional association for speech-language pathologists requires specific qualifications and credentials for membership. In some countries the government regulates practice through licensing, certification, or registration processes (American Speech-Language-Hearing Association, 2011; Canadian Association of Speech-Language Pathologists and Audiologists; Royal College of Speech Therapists, United Kingdom; Speech Pathology Australia).

The following are recommended minimum credentials for voice and communication specialists working with transsexual, transgender, and gender-nonconforming clients:

1. Specialized training and competence in the assessment and development of communication skills in transsexual, transgender, and gender-nonconforming clients.

2. A basic understanding of transgender health, including hormonal and surgical treatments for feminization/masculinization and trans-specific psychosocial issues as outlined in the *SOC*; and familiarity with basic sensitivity protocols such as the use of preferred gender pronoun and name (Canadian Association of Speech-Language Pathologists and Audiologists; Royal College of Speech Therapists, United Kingdom; Speech Pathology Australia).

3. Continuing education in the assessment and development of communication skills in transsexual, transgender, and gender-nonconforming clients. This may include attendance at professional meetings, workshops, or seminars; participation in research related to gender identity issues; independent study; or mentoring from an experienced, certified clinician.

Other professionals such as vocal coaches, theatre professionals, singing teachers, and movement experts may play a valuable adjunct role. Such professionals will ideally have experience working with, or be actively collaborating with, speech-language pathologists.

Assessment and Treatment Considerations

The overall purpose of voice and communication therapy is to help clients adapt their voice and communication in a way that is both safe and authentic, resulting in communication patterns that clients feel are congruent with their gender identity and that reflect their sense of self (Adler, Hirsch, & Mordaunt, 2006). It is essential that voice and communication specialists be sensitive to individual communication preferences. Communication—style, voice, choice of language, etc.—is personal. Individuals should not be counseled to adopt behaviors with which they are not comfortable or which do not feel authentic. Specialists can best serve their clients by taking the time to understand a person's gender concerns and goals for gender-role expression (American Speech-Language-Hearing Association, 2011; Canadian Association of Speech-Language Pathologists and Audiologists; Royal College of Speech Therapists, United Kingdom; Speech Pathology Australia).

Individuals may choose the communication behaviors that they wish to acquire in accordance with their gender identity. These decisions are also informed and supported by the knowledge of the voice and communication specialist and by the assessment data for a specific client (Hancock, Krissinger, & Owen, 2010). Assessment includes a client's self-evaluation and a specialist's evaluation of voice, resonance, articulation, spoken language, and non-verbal communication (Adler et al., 2006; Hancock et al., 2010).

Voice-and-communication treatment plans are developed by considering the available research evidence, the clinical knowledge and experience of the specialist, and the client's own goals and values (American Speech-Language-Hearing Association, 2011; Canadian Association of Speech-Language Pathologists and Audiologists; Royal College of Speech Therapists, United Kingdom; Speech Pathology Australia). Targets of treatment typically include pitch, intonation, loudness and stress patterns, voice quality, resonance, articulation, speech rate and phrasing, language, and nonverbal communication (Adler et al., 2006; Davies & Goldberg, 2006; de Bruin, Coerts, & Greven, 2000; Gelfer, 1999; McNeill, 2006; Oates & Dacakis, 1983). Treatment may involve individual and/or group sessions. The frequency and duration of treatment will vary according to a client's needs. Existing protocols for voice-and-communication treatment can be considered in

developing an individualized therapy plan (Carew, Dacakis, & Oates, 2007; Dacakis, 2000; Davies & Goldberg, 2006; Gelfer, 1999; McNeill, Wilson, Clark, & Deakin, 2008; Mount & Salmon, 1988).

Feminizing or masculinizing the voice involves non-habitual use of the voice production mechanism. Prevention measures are necessary to avoid the possibility of vocal misuse and long-term vocal damage. All voice and communication therapy services should therefore include a vocal health component (Adler et al., 2006).

Vocal Health Considerations After Voice Feminization Surgery

As noted in section XI, some transsexual, transgender, and gender-nonconforming people will undergo voice feminization surgery. (Voice deepening can be achieved through masculinizing hormone therapy, but feminizing hormones do not have an impact on the adult MtF voice.) There are varying degrees of satisfaction, safety, and long-term improvement in patients who have had such surgery. It is recommended that individuals undergoing voice feminization surgery also consult a voice and communication specialist to maximize the surgical outcome, help protect vocal health, and learn nonpitch related aspects of communication. Voice surgery procedures should include follow-up sessions with a voice and communication specialist who is licensed and/or credentialed by the board responsible for speech therapists/speech-language pathologists in that country (Kanagalingam et al., 2005; Neumann & Welzel, 2004).

XI
Surgery

Sex Reassignment Surgery Is Effective and Medically Necessary

Surgery – particularly genital surgery – is often the last and the most considered step in the treatment process for gender dysphoria. While many transsexual, transgender, and gender-nonconforming individuals find comfort with their gender identity, role, and expression without surgery, for many others surgery is essential and medically necessary to alleviate their gender dysphoria (Hage & Karim, 2000). For the latter group, relief from gender dysphoria cannot be achieved

without modification of their primary and/or secondary sex characteristics to establish greater congruence with their gender identity. Moreover, surgery can help patients feel more at ease in the presence of sex partners or in venues such as physicians' offices, swimming pools, or health clubs. In some settings, surgery might reduce risk of harm in the event of arrest or search by police or other authorities.

Follow-up studies have shown an undeniable beneficial effect of sex reassignment surgery on postoperative outcomes such as subjective well-being, cosmesis, and sexual function (De Cuypere et al., 2005; Gijs & Brewaeys, 2007; Klein & Gorzalka, 2009; Pfäfflin & Junge, 1998). Additional information on the outcomes of surgical treatments are summarized in Appendix D.

Ethical Questions Regarding Sex Reassignment Surgery

In ordinary surgical practice, pathological tissues are removed to restore disturbed functions, or alterations are made to body features to improve a patient's self image. Some people, including some health professionals, object on ethical grounds to surgery as a treatment for gender dysphoria, because these conditions are thought not to apply.

It is important that health professionals caring for patients with gender dysphoria feel comfortable about altering anatomically normal structures. In order to understand how surgery can alleviate the psychological discomfort and distress of individuals with gender dysphoria, professionals need to listen to these patients discuss their symptoms, dilemmas, and life histories. The resistance against performing surgery on the ethical basis of "above all do no harm" should be respected, discussed, and met with the opportunity to learn from patients themselves about the psychological distress of having gender dysphoria and the potential for harm caused by denying access to appropriate treatments.

Genital and breast/chest surgical treatments for gender dysphoria are not merely another set of elective procedures. Typical elective procedures involve only a private mutually consenting contract between a patient and a surgeon. Genital and breast/chest surgeries as medically necessary treatments for gender dysphoria are to be undertaken only after assessment of the patient by qualified mental health professionals, as outlined in section VII of the *SOC*. These surgeries may be performed once there is written documentation that this assessment has occurred and that the person has met the criteria for a specific surgical treatment. By following this procedure, mental health professionals, surgeons, and patients share responsibility for the decision to make irreversible changes to the body.

It is unethical to deny availability or eligibility for sex reassignment surgeries solely on the basis of blood seropositivity for blood-borne infections such as HIV or hepatitis C or B.

Relationship of Surgeons with Mental Health Professionals, Hormone-Prescribing Physicians (if Applicable), and Patients (Informed Consent)

The role of a surgeon in the treatment of gender dysphoria is not that of a mere technician. Rather, conscientious surgeons will have insight into each patient's history and the rationale that led to the referral for surgery. To that end, surgeons must talk at length with their patients and have close working relationships with other health professionals who have been actively involved in their clinical care.

Consultation is readily accomplished when a surgeon practices as part of an interdisciplinary health care team. In the absence of this, a surgeon must be confident that the referring mental health professional(s), and if applicable the physician who prescribes hormones, is/are competent in the assessment and treatment of gender dysphoria, because the surgeon is relying heavily on his/her/their expertise.

Once a surgeon is satisfied that the criteria for specific surgeries have been met (as outlined below), surgical treatment should be considered and a preoperative surgical consultation should take place. During this consultation, the procedure and postoperative course should be extensively discussed with the patient. Surgeons are responsible for discussing all of the following with patients seeking surgical treatments for gender dysphoria:

- The different surgical techniques available (with referral to colleagues who provide alternative options);
- The advantages and disadvantages of each technique;
- The limitations of a procedure to achieve "ideal" results; surgeons should provide a full range of before-and-after photographs of their own patients, including both successful and unsuccessful outcomes;
- The inherent risks and possible complications of the various techniques; surgeons should inform patients of their own complication rates with each procedure.

These discussions are the core of the informed consent process, which is both an ethical and legal requirement for any surgical procedure. Ensuring that patients have a realistic expectation of outcomes is important in achieving a result that will alleviate their gender dysphoria.

All of this information should be provided to patients in writing, in a language in which they are fluent, and in graphic illustrations. Patients should receive the information in advance (possibly

via the Internet) and be given ample time to review it carefully. The elements of informed consent should always be discussed face-to-face prior to the surgical intervention. Questions can then be answered and written informed consent can be provided by the patient. Because these surgeries are irreversibile, care should be taken to ensure that patients have sufficient time to absorb information fully before they are asked to provide informed consent. A minimum of 24 hours is suggested.

Surgeons should provide immediate aftercare and consultation with other physicians serving the patient in the future. Patients should work with their surgeon to develop an adequate aftercare plan for the surgery.

Overview of Surgical Procedures for the Treatment of Patients with Gender Dysphoria

For the Male-to-Female (MtF) Patient, Surgical Procedures May Include the Following:

1. Breast/chest surgery: augmentation mammoplasty (implants/lipofilling);

2. Genital surgery: penectomy, orchiectomy, vaginoplasty, clitoroplasty, vulvoplasty;

3. Nongenital, nonbreast surgical interventions: facial feminization surgery, liposuction, lipofilling, voice surgery, thyroid cartilage reduction, gluteal augmentation (implants/lipofilling), hair reconstruction, and various aesthetic procedures.

For the Female-to-Male (FtM) Patient, Surgical Procedures May Include the Following:

1. Breast/chest surgery: subcutaneous mastectomy, creation of a male chest;

2. Genital surgery: hysterectomy/salpingo-oophorectomy, reconstruction of the fixed part of the urethra, which can be combined with a metoidioplasty or with a phalloplasty (employing a pedicled or free vascularized flap), vaginectomy, scrotoplasty, and implantation of erection and/or testicular prostheses;

3. Nongenital, nonbreast surgical interventions: voice surgery (rare), liposuction, lipofilling, pectoral implants, and various aesthetic procedures.

Reconstructive Versus Aesthetic Surgery

The question of whether sex reassignment surgery should be considered "aesthetic" surgery or "reconstructive" surgery is pertinent not only from a philosophical point of view, but also from a financial point of view. Aesthetic or cosmetic surgery is mostly regarded as not medically necessary and therefore is typically paid for entirely by the patient. In contrast, reconstructive procedures are considered medically necessary—with unquestionable therapeutic results—and thus paid for partially or entirely by national health systems or insurance companies.

Unfortunately, in the field of plastic and reconstructive surgery (both in general and specifically for gender-related surgeries), there is no clear distinction between what is purely reconstructive and what is purely cosmetic. Most plastic surgery procedures actually are a mixture of both reconstructive and cosmetic components.

While most professionals agree that genital surgery and mastectomy cannot be considered purely cosmetic, opinions diverge as to what degree other surgical procedures (e.g., breast augmentation, facial feminization surgery) can be considered purely reconstructive. Although it may be much easier to see a phalloplasty or a vaginoplasty as an intervention to end lifelong suffering, for certain patients an intervention like a reduction rhinoplasty can have a radical and permanent effect on their quality of life, and therefore is much more medically necessary than for somebody without gender dysphoria.

Criteria for Surgeries

As for all of the *SOC*, the criteria for initiation of surgical treatments for gender dysphoria were developed to promote optimal patient care. While the *SOC* allow for an individualized approach to best meet a patient's health care needs, a criterion for all breast/chest and genital surgeries is documentation of persistent gender dysphoria by a qualified mental health professional. For some surgeries, additional criteria include preparation and treatment consisting of feminizing/masculinizing hormone therapy and one year of continuous living in a gender role that is congruent with one's gender identity.

These criteria are outlined below. Based on the available evidence and expert clinical consensus, different recommendations are made for different surgeries.

The *SOC* do not specify an order in which different surgeries should occur. The number and sequence of surgical procedures may vary from patient to patient, according to their clinical needs.

Criteria for Breast/Chest Surgery (One Referral)

Criteria for mastectomy and creation of a male chest in FtM patients:

1. Persistent, well-documented gender dysphoria;
2. Capacity to make a fully informed decision and to consent for treatment;
3. Age of majority in a given country (if younger, follow the *SOC* for children and adolescents);
4. If significant medical or mental health concerns are present, they must be reasonably well controlled.

Hormone therapy is not a prerequisite.

Criteria for breast augmentation (implants/lipofilling) in MtF patients:

1. Persistent, well-documented gender dysphoria;
2. Capacity to make a fully informed decision and to consent for treatment;
3. Age of majority in a given country (if younger, follow the *SOC* for children and adolescents);
4. If significant medical or mental health concerns are present, they must be reasonably well controlled.

Although not an explicit criterion, it is recommended that MtF patients undergo feminizing hormone therapy (minimum 12 months) prior to breast augmentation surgery. The purpose is to maximize breast growth in order to obtain better surgical (aesthetic) results.

Criteria for Genital Surgery (Two Referrals)

The criteria for genital surgery are specific to the type of surgery being requested.

Criteria for hysterectomy and salpingo-oophorectomy in FtM patients and for orchiectomy in MtF patients:

1. Persistent, well-documented gender dysphoria;

2. Capacity to make a fully informed decision and to consent for treatment;

3. Age of majority in a given country;

4. If significant medical or mental health concerns are present, they must be well controlled.

5. 12 continuous months of hormone therapy as appropriate to the patient's gender goals (unless hormones are not clinically indicated for the individual).

The aim of hormone therapy prior to gonadectomy is primarily to introduce a period of reversible estrogen or testosterone suppression, before the patient undergoes irreversible surgical intervention.

These criteria do not apply to patients who are having these procedures for medical indications other than gender dysphoria.

Criteria for metoidioplasty or phalloplasty in FtM patients and for vaginoplasty in MtF patients:

1. Persistent, well-documented gender dysphoria;

2. Capacity to make a fully informed decision and to consent for treatment;

3. Age of majority in a given country;

4. If significant medical or mental health concerns are present, they must be well controlled;

5. 12 continuous months of hormone therapy as appropriate to the patient's gender goals (unless hormones are not clinically indicated for the individual).

6. 12 continuous months of living in a gender role that is congruent with their gender identity.

Although not an explicit criterion, it is recommended that these patients also have regular visits with a mental health or other medical professional.

Rationale for a preoperative, 12-month experience of living in an identity-congruent gender role:

The criterion noted above for some types of genital surgeries—i.e., that patients engage in 12 continuous months of living in a gender role that is congruent with their gender identity—is based on expert clinical consensus that this experience provides ample opportunity for patients to experience and socially adjust in their desired gender role, before undergoing irreversible surgery. As noted in section VII, the social aspects of changing one's gender role are usually challenging—

often more so than the physical aspects. Changing gender role can have profound personal and social consequences, and the decision to do so should include an awareness of what the familial, interpersonal, educational, vocational, economic, and legal challenges are likely to be, so that people can function successfully in their gender role. Support from a qualified mental health professional and from peers can be invaluable in ensuring a successful gender role adaptation (Bockting, 2008).

The duration of 12 months allows for a range of different life experiences and events that may occur throughout the year (e.g., family events, holidays, vacations, season-specific work or school experiences). During this time, patients should present consistently, on a day-to-day basis and across all settings of life, in their desired gender role. This includes coming out to partners, family, friends, and community members (e.g., at school, work, other settings).

Health professionals should clearly document a patient's experience in the gender role in the medical chart, including the start date of living full time for those who are preparing for genital surgery. In some situations, if needed, health professionals may request verification that this criterion has been fulfilled: They may communicate with individuals who have related to the patient in an identity-congruent gender role, or request documentation of a legal name and/or gender marker change, if applicable.

Surgery for People with Psychotic Conditions and Other Serious Mental Illnesses

When patients with gender dysphoria are also diagnosed with severe psychiatric disorders and impaired reality testing (e.g., psychotic episodes, bipolar disorder, dissociative identity disorder, borderline personality disorder), an effort must be made to improve these conditions with psychotropic medications and/or psychotherapy before surgery is contemplated. (Dhejne et al., 2011). Reevaluation by a mental health professional qualified to assess and manage psychotic conditions should be conducted prior to surgery, describing the patient's mental status and readiness for surgery. It is preferable that this mental health professional be familiar with the patient. No surgery should be performed while a patient is actively psychotic (De Cuypere & Vercruysse, 2009).

Competency of Surgeons Performing Breast/Chest or Genital Surgery

Physicians who perform surgical treatments for gender dsyphoria should be urologists, gynecologists, plastic surgeons, or general surgeons, and board-certified as such by the relevant national

and/or regional association. Surgeons should have specialized competence in genital reconstructive techniques as indicated by documented supervised training with a more experienced surgeon. Even experienced surgeons must be willing to have their surgical skills reviewed by their peers. An official audit of surgical outcomes and publication of these results would be greatly reassuring to both referring health professionals and patients. Surgeons should regularly attend professional meetings where new techniques are presented. The internet is often effectively used by patients to share information on their experience with surgeons and their teams.

Ideally, surgeons should be knowledgeable about more than one surgical technique for genital reconstruction so that they, in consultation with patients, can choose the ideal technique for each individual. Alternatively, if a surgeon is skilled in a single technique and this procedure is either not suitable for or desired by a patient, the surgeon should inform the patient about other procedures and offer referral to another appropriately skilled surgeon.

Breast/Chest Surgery Techniques and Complications

Although breast/chest appearance is an important secondary sex characteristic, breast presence or size is not involved in the legal definitions of sex and gender and is not necessary for reproduction. The performance of breast/chest operations for treatment of gender dysphoria should be considered with the same care as beginning hormone therapy, as both produce relatively irreversible changes to the body.

For the MtF patient, a breast augmentation (sometimes called “chest reconstruction”) is not different from the procedure in a natal female patient. It is usually performed through implantation of breast prostheses and occasionally with the lipofilling technique. Infections and capsular fibrosis are rare complications of augmentation mammoplasty in MtF patients (Kanhai, Hage, Karim, & Mulder, 1999).

For the FtM patient, a mastectomy or “male chest contouring” procedure is available. For many FtM patients, this is the only surgery undertaken. When the amount of breast tissue removed requires skin removal, a scar will result and the patient should be so informed. Complications of subcutaneous mastectomy can include nipple necrosis, contour irregularities, and unsightly scarring (Monstrey et al., 2008).

Genital Surgery Techniques and Complications

Genital surgical procedures for the MtF patient may include orchiectomy, penectomy, vaginoplasty, clitoroplasty, and labiaplasty. Techniques include penile skin inversion, pedicled colosigmoid

transplant, and free skin grafts to line the neovagina. Sexual sensation is an important objective in vaginoplasty, along with creation of a functional vagina and acceptable cosmesis.

Surgical complications of MtF genital surgery may include complete or partial necrosis of the vagina and labia, fistulas from the bladder or bowel into the vagina, stenosis of the urethra, and vaginas that are either too short or too small for coitus. While the surgical techniques for creating a neovagina are functionally and aesthetically excellent, anorgasmia following the procedure has been reported, and a second stage labiaplasty may be needed for cosmesis (Klein & Gorzalka, 2009; Lawrence, 2006).

Genital surgical procedures for FtM patients may include hysterectomy, salpingo-oophorectomy, vaginectomy, metoidioplasty, scrotoplasty, urethroplasty, placement of testicular prostheses, and phalloplasty. For patients without former abdominal surgery, the laparoscopic technique for hysterectomy and salpingo-oophorectomy is recommended to avoid a lower-abdominal scar. Vaginal access may be difficult as most patients are nulliparous and have often not experienced penetrative intercourse. Current operative techniques for phalloplasty are varied. The choice of techniques may be restricted by anatomical or surgical considerations and by a client's financial considerations. If the objectives of phalloplasty are a neophallus of good appearance, standing micturition, sexual sensation, and/or coital ability, patients should be clearly informed that there are several separate stages of surgery and frequent technical difficulties, which may require additional operations. Even metoidioplasty, which in theory is a one-stage procedure for construction of a microphallus, often requires more than one operation. The objective of standing micturition with this technique can not always be ensured (Monstrey et al., 2009).

Complications of phalloplasty in FtMs may include frequent urinary tract stenoses and fistulas, and occasionally necrosis of the neophallus. Metoidioplasty results in a micropenis, without the capacity for standing urination. Phalloplasty, using a pedicled or a free vascularized flap, is a lengthy, multi-stage procedure with significant morbidity that includes frequent urinary complications and unavoidable donor site scarring. For this reason, many FtM patients never undergo genital surgery other than hysterectomy and salpingo-oophorectomy (Hage & De Graaf, 1993).

Even patients who develop severe surgical complications seldom regret having undergone surgery. The importance of surgery can be appreciated by the repeated finding that quality of surgical results is one of the best predictors of the overall outcome of sex reassignment (Lawrence, 2006).

Other Surgeries

Other surgeries for assisting in body feminization include reduction thyroid chondroplasty (reduction of the Adam's apple), voice modification surgery, suction-assisted lipoplasty (contour

modeling) of the waist, rhinoplasty (nose correction), facial bone reduction, face-lift, and blepharoplasty (rejuvenation of the eyelid). Other surgeries for assisting in body masculinization include liposuction, lipofilling, and pectoral implants. Voice surgery to obtain a deeper voice is rare but may be recommended in some cases, such as when hormone therapy has been ineffective.

Although these surgeries do not require referral by mental health professionals, such professionals can play an important role in assisting clients in making a fully informed decision about the timing and implications of such procedures in the context of the social transition.

Although most of these procedures are generally labeled "purely aesthetic," these same operations in an individual with severe gender dysphoria can be considered medically necessary, depending on the unique clinical situation of a given patient's condition and life situation. This ambiguity reflects reality in clinical situations, and allows for individual decisions as to the need and desirability of these procedures.

XII

Postoperative Care and Follow-Up

Long-term postoperative care and follow-up after surgical treatments for gender dysphoria are associated with good surgical and psychosocial outcomes (Monstrey et al., 2009). Follow-up is important to a patient's subsequent physical and mental health and to a surgeon's knowledge about the benefits and limitations of surgery. Surgeons who operate on patients coming from long distances should include personal follow-up in their care plan and attempt to ensure affordable local long-term aftercare in their patients' geographic region.

Postoperative patients may sometimes exclude themselves from follow-up by specialty providers, including the hormone-prescribing physician (for patients receiving hormones), not recognizing that these providers are often best able to prevent, diagnose, and treat medical conditions that are unique to hormonally and surgically treated patients. The need for follow-up equally extends to mental health professionals, who may have spent a longer period of time with the patient than any other professional and therefore are in an excellent position to assist in any postoperative adjustment difficulties. Health professionals should stress the importance of postoperative follow-up care with their patients and offer continuity of care.

Postoperative patients should undergo regular medical screening according to recommended guidelines for their age. This is discussed more in the next section.

XIII
Lifelong Preventive and Primary Care

Transsexual, transgender, and gender-nonconforming people need health care throughout their lives. For example, to avoid the negative secondary effects of having a gonadectomy at a relatively young age and/or receiving long-term, high-dose hormone therapy, patients need thorough medical care by providers experienced in primary care and transgender health. If one provider is not able to provide all services, ongoing communication among providers is essential.

Primary care and health maintenance issues should be addressed before, during, and after any possible changes in gender role and medical interventions to alleviate gender dysphoria. While hormone providers and surgeons play important roles in preventive care, every transsexual, transgender, and gender-nonconforming person should partner with a primary care provider for overall health care needs (Feldman, 2007).

General Preventive Health Care

Screening guidelines developed for the general population are appropriate for organ systems that are unlikely to be affected by feminizing/masculinizing hormone therapy. However, in areas such as cardiovascular risk factors, osteoporosis, and some cancers (breast, cervical, ovarian, uterine, and prostate), such general guidelines may either over- or underestimate the cost-effectiveness of screening individuals who are receiving hormone therapy.

Several resources provide detailed protocols for the primary care of patients undergoing feminizing/masculinizing hormone therapy, including therapy that is provided after sex reassignment surgeries (Center of Excellence for Transgender Health, UCSF, 2011; Feldman & Goldberg, 2006; Feldman, 2007; Gorton, Buth, & Spade, 2005). Clinicians should consult their national evidence-based guidelines and discuss screening with their patients in light of the effects of hormone therapy on their baseline risk.

Cancer Screening

Cancer screening of organ systems that are associated with sex can present particular medical and psychosocial challenges for transsexual, transgender, and gender-nonconforming patients and their health care providers. In the absence of large-scale prospective studies, providers are unlikely to have enough evidence to determine the appropriate type and frequency of cancer screenings for this population. Over-screening results in higher health care costs, high false positive rates, and often unnecessary exposure to radiation and/or diagnostic interventions such as biopsies. Under-screening results in diagnostic delay for potentially treatable cancers. Patients may find cancer screening gender affirming (such as mammograms for MtF patients) or both physically and emotionally painful (such as Pap smears offer continuity of care for FtM patients).

Urogenital Care

Gynecologic care may be necessary for transsexual, transgender, and gender-nonconforming people of both sexes. For FtM patients, such care is needed predominantly for individuals who have not had genital surgery. For MtF patients, such care is needed after genital surgery. While many surgeons counsel patients regarding postoperative urogenital care, primary care clinicians and gynecologists should also be familiar with the special genital concerns of this population.

All MtF patients should receive counseling regarding genital hygiene, sexuality, and prevention of sexually transmitted infections; those who have had genital surgery should also be counseled on the need for regular vaginal dilation or penetrative intercourse in order to maintain vaginal depth and width (van Trotsenburg, 2009). Due to the anatomy of the male pelvis, the axis and the dimensions of the neovagina differ substantially from those of a biologic vagina. This anatomic difference can affect intercourse if not understood by MtF patients and their partners (van Trotsenburg, 2009).

Lower urinary tract infections occur frequently in MtF patients who have had surgery because of the reconstructive requirements of the shortened urethra. In addition, these patients may suffer from functional disorders of the lower urinary tract; such disorders may be caused by damage of the autonomous nerve supply of the bladder floor during dissection between the rectum and the bladder, and by a change of the position of the bladder itself. A dysfunctional bladder (e.g., overactive bladder, stress or urge urinary incontinence) may occur after sex reassignment surgery (Hoebeke et al., 2005; Kuhn, Hiltebrand, & Birkhauser, 2007).

Most FtM patients do not undergo vaginectomy (colpectomy). For patients who take masculinizing hormones, despite considerable conversion of testosterone to estrogens, atrophic changes of the vaginal lining can be observed regularly and may lead to pruritus or burning. Examination can be

both physically and emotionally painful, but lack of treatment can seriously aggravate the situation. Gynecologists treating the genital complaints of FtM patients should be aware of the sensitivity that patients with a male gender identity and masculine gender expression might have around having genitals typically associated with the female sex.

XIV

Applicability of the *Standards of Care* to People Living in Institutional Environments

The *SOC* in their entirety apply to all transsexual, transgender, and gender-nonconforming people, irrespective of their housing situation. People should not be discriminated against in their access to appropriate health care based on where they live, including institutional environments such as prisons or long-/intermediate-term health care facilities (Brown, 2009). Health care for transsexual, transgender, and gender-nonconforming people living in an institutional environment should mirror that which would be available to them if they were living in a non-institutional setting within the same community.

All elements of assessment and treatment as described in the *SOC* can be provided to people living in institutions (Brown, 2009). Access to these medically necessary treatments should not be denied on the basis of institutionalization or housing arrangements. If the in-house expertise of health professionals in the direct or indirect employ of the institution does not exist to assess and/or treat people with gender dysphoria, it is appropriate to obtain outside consultation from professionals who are knowledgeable about this specialized area of health care.

People with gender dysphoria in institutions may also have coexisting mental health conditions (Cole et al., 1997). These conditions should be evaluated and treated appropriately.

People who enter an institution on an appropriate regimen of hormone therapy should be continued on the same, or similar, therapies and monitored according to the *SOC*. A "freeze frame" approach is not considered appropriate care in most situations *(Kosilek v. Massachusetts Department of Corrections/Maloney,* C.A. No. 92–12820-MLW, 2002). People with gender dysphoria who are deemed appropriate for hormone therapy (following the *SOC*) should be started on such therapy. The consequences of abrupt withdrawal of hormones or lack of initiation of hormone therapy when medically necessary include a high likelihood of negative outcomes such as surgical self-treatment by autocastration, depressed mood, dysphoria, and/or suicidality (Brown, 2010).

Reasonable accommodations to the institutional environment can be made in the delivery of care consistent with the *SOC*, if such accommodations do not jeopardize the delivery of medically necessary care to people with gender dysphoria. An example of a reasonable accommodation is the use of injectable hormones, if not medically contraindicated, in an environment where diversion of oral preparations is highly likely (Brown, 2009). Denial of needed changes in gender role or access to treatments, including sex reassignment surgery, on the basis of residence in an institution are not reasonable accommodations under the *SOC* (Brown, 2010).

Housing and shower/bathroom facilities for transsexual, transgender, and gender-nonconforming people living in institutions should take into account their gender identity and role, physical status, dignity, and personal safety. Placement in a single-sex housing unit, ward, or pod on the sole basis of the appearance of the external genitalia may not be appropriate and may place the individual at risk for victimization (Brown, 2009).

Institutions where transsexual, transgender, and gender-nonconforming people reside and receive health care should monitor for a tolerant and positive climate to ensure that residents are not under attack by staff or other residents.

XV

Applicability of the *Standards of Care* to People With Disorders of Sex Development

Terminology

The term *disorder of sex development* (DSD) refers to a somatic condition of atypical development of the reproductive tract (Hughes, Houk, Ahmed, Lee, & LWPES/ESPE Consensus Group, 2006). DSDs include the condition that used to be called *intersexuality*. Although the terminology was changed to DSD during an international consensus conference in 2005 (Hughes et al., 2006), disagreement about language use remains. Some people object strongly to the "disorder" label, preferring instead to view these congenital conditions as a matter of diversity (Diamond, 2009) and to continue using the terms *intersex* or *intersexuality*. In the *SOC*, WPATH uses the term DSD in an objective and value-free manner, with the goal of ensuring that health professionals recognize this medical term and use it to access relevant literature as the field progresses. WPATH remains

open to new terminology that will further illuminate the experience of members of this diverse population and lead to improvements in health care access and delivery.

Rationale for Addition to the *SOC*

Previously, individuals with a DSD who also met the *DSM-IV-TR's* behavioral criteria for Gender Identity Disorder (American Psychiatric Association, 2000) were excluded from that general diagnosis. Instead, they were categorized as having a "Gender Identity Disorder - Not Otherwise Specified." They were also excluded from the WPATH *Standards of Care*.

The current proposal for *DSM-5* (www.dsm5.org) is to replace the term *gender identity disorder* with *gender dysphoria*. Moreover, the proposed changes to the *DSM* consider gender dysphoric people with a DSD to have a subtype of gender dysphoria. This proposed categorization—which explicitly differentiates between gender dysphoric individuals with and without a DSD—is justified: In people with a DSD, gender dysphoria differs in its phenomenological presentation, epidemiology, life trajectories, and etiology (Meyer-Bahlburg, 2009).

Adults with a DSD and gender dysphoria have increasingly come to the attention of health professionals. Accordingly, a brief discussion of their care is included in this version of the *SOC*.

Health History Considerations

Health professionals assisting patients with both a DSD and gender dysphoria need to be aware that the medical context in which such patients have grown up is typically very different from that of people without a DSD.

Some people are recognized as having a DSD through the observation of gender-atypical genitals at birth. (Increasingly this observation is made during the prenatal period by way of imaging procedures such as ultrasound.) These infants then undergo extensive medical diagnostic procedures. After consultation among the family and health professionals—during which the specific diagnosis, physical and hormonal findings, and feedback from long-term outcome studies (Cohen-Kettenis, 2005; Dessens, Slijper, & Drop, 2005; Jurgensen, Hiort, Holterhus, & Thyen, 2007; Mazur, 2005; Meyer-Bahlburg, 2005; Stikkelbroeck et al., 2003; Wisniewski, Migeon, Malouf, & Gearhart, 2004) are considered—the newborn is assigned a sex, either male or female.

Other individuals with a DSD come to the attention of health professionals around the age of puberty through the observation of atypical development of secondary sex characteristics. This observation also leads to a specific medical evaluation.

The type of DSD and severity of the condition has significant implications for decisions about a patient's initial sex assignment, subsequent genital surgery, and other medical and psychosocial care (Meyer-Bahlburg, 2009). For instance, the degree of prenatal androgen exposure in individuals with a DSD has been correlated with the degree of masculinization of gender-related *behavior* (that is, *gender role and expression*); however, the correlation is only moderate, and considerable behavioral variability remains unaccounted for by prenatal androgen exposure (Jurgensen et al., 2007; Meyer-Bahlburg, Dolezal, Baker, Ehrhardt, & New, 2006). Notably, a similar correlation of prenatal hormone exposure with gender *identity* has not been demonstrated (e.g., Meyer-Bahlburg et al., 2004). This is underlined by the fact that people with the same (core) gender identity can vary widely in the degree of masculinization of their gender-related behavior.

Assessment and Treatment of Gender Dysphoria in People with Disorders of Sex Development

Very rarely are individuals with a DSD identified as having gender dysphoria *before* a DSD diagnosis has been made. Even so, a DSD diagnosis is typically apparent with an appropriate history and basic physical exam—both of which are part of a medical evaluation for the appropriateness of hormone therapy or surgical interventions for gender dysphoria. Mental health professionals should ask their clients presenting with gender dysphoria to have a physical exam, particularly if they are not currently seeing a primary care (or other health care) provider.

Most people with a DSD who are born with genital ambiguity do not develop gender dysphoria (e.g., Meyer-Bahlburg, Dolezal, et al., 2004; Wisniewski et al., 2004). However, some people with a DSD will develop chronic gender dysphoria and even undergo a change in their birth-assigned sex and/or their gender role (Meyer-Bahlburg, 2005; Wilson, 1999; Zucker, 1999). If there are persistent and strong indications that gender dysphoria is present, a comprehensive evaluation by clinicians skilled in the assessment and treatment of gender dysphoria is essential, irrespective of the patient's age. Detailed recommendations have been published for conducting such an assessment and for making treatment decisions to address gender dysphoria in the context of a DSD (Meyer-Bahlburg, 2011). Only after thorough assessment should steps be taken in the direction of changing a patient's birth-assigned sex or gender role.

Clinicians assisting these patients with treatment options to alleviate gender dysphoria may profit from the insights gained from providing care to patients without a DSD (Cohen-Kettenis, 2010).

However, certain criteria for treatment (e.g., age, duration of experience with living in the desired gender role) are usually not routinely applied to people with a DSD; rather, the criteria are interpreted in light of a patient's specific situation (Meyer-Bahlburg, 2011). In the context of a DSD, changes in birth-assigned sex and gender role have been made at any age between early elementary-school age and middle adulthood. Even genital surgery may be performed much earlier in these patients than in gender dysphoric individuals without a DSD if the surgery is well justified by the diagnosis, by the evidence-based gender-identity prognosis for the given syndrome and syndrome severity, and by the patient's wishes.

One reason for these treatment differences is that genital surgery in individuals with a DSD is quite common in infancy and adolescence. Infertility may already be present due to either early gonadal failure or to gonadectomy because of a malignancy risk. Even so, it is advisable for patients with a DSD to undergo a full social transition to another gender role only if there is a long-standing history of gender-atypical behavior, and if gender dysphoria and/or the desire to change one's gender role has been strong and persistent for a considerable period of time. Six months is the time period of full symptom expression required for the application of the gender dysphoria diagnosis proposed for *DSM-5* (Meyer-Bahlburg, 2011).

Additional Resources

The gender-relevant medical histories of people with a DSD are often complex. Their histories may include a great variety of inborn genetic, endocrine, and somatic atypicalities, as well as various hormonal, surgical, and other medical treatments. For this reason, many additional issues need to be considered in the psychosocial and medical care of such patients, regardless of the presence of gender dysphoria. Consideration of these issues is beyond what can be covered in the *SOC*. The interested reader is referred to existing publications (e.g., Cohen-Kettenis & Pfäfflin, 2003; Meyer-Bahlburg, 2002, 2008). Some families and patients also find it useful to consult or work with community support groups.

There is a very substantial medical literature on the medical management of patients with a DSD. Much of this literature has been produced by high-level specialists in pediatric endocrinology and urology, with input from specialized mental health professionals, especially in the area of gender. Recent international consensus conferences have addressed evidence-based care guidelines (including issues of gender and of genital surgery) for DSD in general (Hughes et al., 2006) and specifically for Congenital Adrenal Hyperplasia (Joint LWPES/ESPE CAH Working Group et al., 2002; Speiser et al., 2010). Others have addressed the research needs for DSD in general (Meyer-Bahlburg & Blizzard, 2004) and for selected syndromes such as 46,XXY (Simpson et al., 2003).

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APPENDIX A
GLOSSARY

Terminology in the area of health care for transsexual, transgender, and gender-nonconforming people is rapidly evolving; new terms are being introduced, and the definitions of existing terms are changing. Thus, there is often misunderstanding, debate, or disagreement about language in this field. Terms that may be unfamiliar or that have specific meanings in the *SOC* are defined below for the purpose of this document only. Others may adopt these definitions, but WPATH acknowledges that these terms may be defined differently in different cultures, communities, and contexts.

WPATH also acknowledges that many terms used in relation to this population are not ideal. For example, the terms *transsexual* and *transvestite*—and, some would argue, the more recent term *transgender*—have been applied to people in an objectifying fashion. Yet such terms have been more or less adopted by many people who are making their best effort to make themselves understood. By continuing to use these terms, WPATH intends only to ensure that concepts and processes are comprehensible, in order to facilitate the delivery of quality health care to transsexual, transgender, and gender-nonconforming people. WPATH remains open to new terminology that will further illuminate the experience of members of this diverse population and lead to improvements in health care access and delivery.

Bioidentical hormones: Hormones that are *structurally* identical to those found in the human body (ACOG Committee of Gynecologic Practice, 2005). The hormones used in bioidentical hormone therapy (BHT) are generally derived from plant sources and are structurally similar to endogenous human hormones, but they need to be commercially processed to become bioidentical.

Bioidentical compounded hormone therapy (BCHT): Use of hormones that are prepared, mixed, assembled, packaged, or labeled as a drug by a pharmacist and custom-made for a patient according to a physician's specifications. Government drug agency approval is not possible for each compounded product made for an individual consumer.

Cross-dressing (transvestism): Wearing clothing and adopting a gender role presentation that, in a given culture, is more typical of the other sex.

Disorders of sex development (DSD): Congenital conditions in which the development of chromosomal, gonadal, or anatomic sex is atypical. Some people strongly object to the "disorder" label and instead view these conditions as a matter of diversity (Diamond, 2009), preferring the terms *intersex* and *intersexuality*.

Female-to-Male (FtM): Adjective to describe individuals assigned female at birth who are changing or who have changed their body and/or gender role from birth-assigned female to a more masculine body or role.

Gender dysphoria: Distress that is caused by a discrepancy between a person's gender identity and that person's sex assigned at birth (and the associated gender role and/or primary and secondary sex characteristics) (Fisk, 1974; Knudson, De Cuypere, & Bockting, 2010b).

Gender identity: A person's intrinsic sense of being male (a boy or a man), female (a girl or woman), or an alternative gender (e.g., boygirl, girlboy, transgender, genderqueer, eunuch) (Bockting, 1999; Stoller, 1964).

Gender identity disorder: Formal diagnosis set forth by the *Diagnostic Statistical Manual of Mental Disorders, 4th Edition, Text Rev (DSM IV-TR)* (American Psychiatric Association, 2000). Gender identity disorder is characterized by a strong and persistent cross-gender identification and a persistent discomfort with one's sex or sense of inappropriateness in the gender role of that sex, causing clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Gender-nonconforming: Adjective to describe individuals whose gender identity, role, or expression differs from what is normative for their assigned sex in a given culture and historical period.

Gender role or expression: Characteristics in personality, appearance, and behavior that in a given culture and historical period are designated as masculine or feminine (that is, more typical of the male or female social role) (Ruble, Martin, & Berenbaum, 2006). While most individuals present socially in clearly masculine or feminine gender roles, some people present in an alternative gender role such as genderqueer or specifically transgender. All people tend to incorporate both masculine and feminine characteristics in their gender expression in varying ways and to varying degrees (Bockting, 2008).

Genderqueer: Identity label that may be used by individuals whose gender identity and/or role does not conform to a binary understanding of gender as limited to the categories of man or woman, male or female (Bockting, 2008).

Internalized transphobia: Discomfort with one's own transgender feelings or identity as a result of internalizing society's normative gender expectations.

Male-to-Female (MtF): Adjective to describe individuals assigned male at birth who are changing or who have changed their body and/or gender role from birth-assigned male to a more feminine body or role.

Natural hormones: Hormones that are derived from natural *sources* such as plants or animals. Natural hormones may or may not be bioidentical.

Sex: Sex is assigned at birth as male or female, usually based on the appearance of the external genitalia. When the external genitalia are ambiguous, other components of sex (internal genitalia, chromosomal and hormonal sex) are considered in order to assign sex (Grumbach, Hughes, & Conte, 2003; MacLaughlin & Donahoe, 2004; Money & Ehrhardt, 1972; Vilain, 2000). For most people, gender identity and expression are consistent with their sex assigned at birth; for transsexual, transgender, and gender-nonconforming individuals, gender identity or expression differ from their sex assigned at birth.

Sex reassignment surgery (gender affirmation surgery): Surgery to change primary and/or secondary sex characteristics to affirm a person's gender identity. Sex reassignment surgery can be an important part of medically necessary treatment to alleviate gender dysphoria.

Transgender: Adjective to describe a diverse group of individuals who cross or transcend culturally defined categories of gender. The gender identity of transgender people differs to varying degrees from the sex they were assigned at birth (Bockting, 1999).

Transition: Period of time when individuals change from the gender role associated with their sex assigned at birth to a different gender role. For many people, this involves learning how to live socially in another gender role; for others this means finding a gender role and expression that are most comfortable for them. Transition may or may not include feminization or masculinization of the body through hormones or other medical procedures. The nature and duration of transition are variable and individualized.

Transsexual: Adjective (often applied by the medical profession) to describe individuals who seek to change or who have changed their primary and/or secondary sex characteristics through femininizing or masculinizing medical interventions (hormones and/or surgery), typically accompanied by a permanent change in gender role.

APPENDIX B
OVERVIEW OF MEDICAL RISKS OF HORMONE THERAPY

The risks outlined below are based on two comprehensive, evidence-based literature reviews of masculinizing/feminizing hormone therapy (Feldman & Safer, 2009; Hembree et al., 2009), along with a large cohort study (Asscheman et al., 2011). These reviews can serve as detailed references for providers, along with other widely recognized, published clinical materials (e.g., Dahl et al., 2006; Ettner et al., 2007).

Risks of Feminizing Hormone Therapy (MtF)

Likely Increased Risk:

Venous thromboembolic disease

- Estrogen use increases the risk of venous thromboembolic events (VTE), particularly in patients who are over age 40, smokers, highly sedentary, obese, and who have underlying thrombophilic disorders.
- This risk is increased with the additional use of third generation progestins.
- This risk is decreased with use of the transdermal (versus oral) route of estradiol administration, which is recommended for patients at higher risk of VTE.

Cardiovascular, cerebrovascular disease

- Estrogen use increases the risk of cardiovascular events in patients over age 50 with underlying cardiovascular risk factors. Additional progestin use may increase this risk.

Lipids

- Oral estrogen use may markedly increase triglycerides in patients, increasing the risk of pancreatitis and cardiovascular events.
- Different routes of administration will have different metabolic effects on levels of HDL cholesterol, LDL cholesterol and lipoprotein(a).
- In general, clinical evidence suggests that MtF patients with pre-existing lipid disorders may benefit from the use of transdermal rather than oral estrogen.

Liver/gallbladder

- Estrogen and cyproterone acetate use may be associated with transient liver enzyme elevations and, rarely, clinical hepatotoxicity.
- Estrogen use increases the risk of cholelithiasis (gall stones) and subsequent cholecystectomy.

Possible Increased Risk:

Type 2 diabetes mellitus

- Feminizing hormone therapy, particularly estrogen, may increase the risk of type 2 diabetes, particularly among patients with a family history of diabetes or other risk factors for this disease.

Hypertension

- Estrogen use may increase blood pressure, but the effect on incidence of overt hypertension is unknown.
- Spironolactone reduces blood pressure and is recommended for at-risk or hypertensive patients desiring feminization.

Prolactinoma

- Estrogen use increases the risk of hyperprolactinemia among MtF patients in the first year of treatment, but this risk is unlikely thereafter.
- High-dose estrogen use may promote the clinical appearance of preexisting but clinically unapparent prolactinoma.

Inconclusive or No Increased Risk:

Items in this category include those that may present risk, but for which the evidence is so minimal that no clear conclusion can be reached.

Breast cancer

- MtF persons who have taken feminizing hormones do experience breast cancer, but it is unknown how their degree of risk compares to that of persons born with female genitalia.
- Longer duration of feminizing hormone exposure (i.e., number of years taking estrogen preparations), family history of breast cancer, obesity (BMI >35), and the use of progestins likely influence the level of risk.

Other Side Effects of Feminizing Therapy:

The following effects may be considered minor or even desired, depending on the patient, but are clearly associated with feminizing hormone therapy.

Fertility and sexual function

- Feminizing hormone therapy may impair fertility.
- Feminizing hormone therapy may decrease libido.
- Feminizing hormone therapy reduces nocturnal erections, with variable impact on sexually stimulated erections.

Risks of Anti-Androgen Medications:

Feminizing hormone regimens often include a variety of agents that affect testosterone production or action. These include GnRH agonists, progestins (including cyproterone acetate), spironolactone, and 5-alpha reductase inhibitors. An extensive discussion of the specific risks of these agents is beyond the scope of the *SOC*. However, both spironolactone and cyproterone acetate are widely used and deserve some comment.

Cyproterone acetate is a progestational compound with anti-androgenic properties (Gooren, 2005; Levy et al., 2003). Although widely used in Europe, it is not approved for use in the United States because of concerns about hepatotoxicity (Thole, Manso, Salgueiro, Revuelta, & Hidalgo, 2004). Spironolactone is commonly used as an anti-androgen in feminizing hormone therapy, particularly in regions where cyproterone is not approved for use (Dahl et al., 2006; Moore et al., 2003; Tangpricha et al., 2003). Spironolactone has a long history of use in treating hypertension and congestive heart failure. Its common side effects include hyperkalemia, dizziness, and gastrointestinal symptoms (*Physicians' Desk Reference*, 2007).

Risks of Masculinizing Hormone Therapy (FtM)

Likely Increased Risk:

Polycythemia

- Masculinizing hormone therapy involving testosterone or other androgenic steroids increases the risk of polycythemia (hematocrit > 50%), particularly in patients with other risk factors.
- Transdermal administration and adaptation of dosage may reduce this risk.

Weight gain/visceral fat

- Masculinizing hormone therapy can result in modest weight gain, with an increase in visceral fat.

Possible Increased Risk:

Lipids

- Testosterone therapy decreases HDL, but variably affects LDL and triglycerides.
- Supraphysiologic (beyond normal male range) serum levels of testosterone, often found with extended intramuscular dosing, may worsen lipid profiles, whereas transdermal administration appears to be more lipid neutral.
- Patients with underlying polycystic ovarian syndrome or dyslipidemia may be at increased risk of worsening dyslipidemia with testosterone therapy.

Liver

- Transient elevations in liver enzymes may occur with testosterone therapy.
- Hepatic dysfunction and malignancies have been noted with oral methyltestosterone. However, methyltestosterone is no longer available in most countries and should no longer be used.

Psychiatric

Masculinizing therapy involving testosterone or other androgenic steroids may increase the risk of hypomanic, manic, or psychotic symptoms in patients with underlying psychiatric disorders that include such symptoms. This adverse event appears to be associated with higher doses or supraphysiologic blood levels of testosterone.

Inconclusive or No Increased Risk:

Items in this category include those that may present risk, but for which the evidence is so minimal that no clear conclusion can be reached.

Osteoporosis

- Testosterone therapy maintains or increases bone mineral density among FtM patients prior to oophorectomy, at least in the first three years of treatment.
- There is an increased risk of bone density loss after oophorectomy, particularly if testosterone therapy is interrupted or insufficient. This includes patients utilizing solely oral testosterone.

Cardiovascular

- Masculinizing hormone therapy at normal physiologic doses does not appear to increase the risk of cardiovascular events among healthy patients.
- Masculinizing hormone therapy may increase the risk of cardiovascular disease in patients with underlying risks factors.

Hypertension

- Masculinizing hormone therapy at normal physiologic doses may increase blood pressure but does not appear to increase the risk of hypertension.
- Patients with risk factors for hypertension, such as weight gain, family history, or polycystic ovarian syndrome, may be at increased risk.

Type 2 diabetes mellitus

- Testosterone therapy does not appear to increase the risk of type 2 diabetes among FtM patients overall, unless other risk factors are present.
- Testosterone therapy may further increase the risk of type 2 diabetes in patients with other risk factors, such as significant weight gain, family history, and polycystic ovarian syndrome. There are no data that suggest or show an increase in risk in those with risk factors for dyslipidemia.

Breast cancer

- Testosterone therapy in FtM patients does not increase the risk of breast cancer.

Cervical cancer

- Testosterone therapy in FtM patients does not increase the risk of cervical cancer, although it may increase the risk of minimally abnormal Pap smears due to atrophic changes.

Ovarian cancer

- Analogous to persons born with female genitalia with elevated androgen levels, testosterone therapy in FtM patients may increase the risk of ovarian cancer, although evidence is limited.

Endometrial (uterine) cancer

- Testosterone therapy in FtM patients may increase the risk of endometrial cancer, although evidence is limited.

Other Side Effects of Masculinizing Therapy:

The following effects may be considered minor or even desired, depending on the patient, but are clearly associated with masculinization.

Fertility and sexual function

- Testosterone therapy in FtM patients reduces fertility, although the degree and reversibility are unknown.

- Testosterone therapy can induce permanent anatomic changes in the developing embryo or fetus.
- Testosterone therapy induces clitoral enlargement and increases libido.

Acne, androgenic alopecia

Acne and varying degrees of male pattern hair loss (androgenic alopecia) are common side effects of masculinizing hormone therapy.

APPENDIX C
SUMMARY OF CRITERIA FOR HORMONE THERAPY AND SURGERIES

As for all previous versions of the *SOC*, the criteria put forth in the *SOC* for hormone therapy and surgical treatments for gender dysphoria are clinical guidelines; individual health professionals and programs may modify them. Clinical departures from the *SOC* may come about because of a patient's unique anatomic, social, or psychological situation; an experienced health professional's evolving method of handling a common situation; a research protocol; lack of resources in various parts of the world; or the need for specific harm-reduction strategies. These departures should be recognized as such, explained to the patient, and documented through informed consent for quality patient care and legal protection. This documentation is also valuable to accumulate new data, which can be retrospectively examined to allow for health care—and the *SOC*—to evolve.

Criteria for Feminizing/Masculinizing Hormone Therapy (One Referral or Chart Documentation of Psychosocial Assessment)

1. Persistent, well-documented gender dysphoria;
2. Capacity to make a fully informed decision and to give consent for treatment;
3. Age of majority in a given country (if younger, follow the *SOC* for children and adolescents);
4. If significant medical or mental concerns are present, they must be reasonably well controlled.

Criteria for Breast/Chest Surgery (One Referral)

Mastectomy and Creation of a Male Chest in FtM Patients:

1. Persistent, well-documented gender dysphoria;
2. Capacity to make a fully informed decision and to give consent for treatment;
3. Age of majority in a given country (if younger, follow the *SOC* for children and adolescents);
4. If significant medical or mental health concerns are present, they must be reasonably well controlled.

Hormone therapy is not a prerequisite.

Breast Augmentation (Implants/Lipofilling) in MtF Patients:

1. Persistent, well-documented gender dysphoria;
2. Capacity to make a fully informed decision and to give consent for treatment;
3. Age of majority in a given country (if younger, follow the *SOC* for children and adolescents);
4. If significant medical or mental health concerns are present, they must be reasonably well controlled.

Although not an explicit criterion, it is recommended that MtF patients undergo feminizing hormone therapy (minimum 12 months) prior to breast augmentation surgery. The purpose is to maximize breast growth in order to obtain better surgical (aesthetic) results.

Criteria for Genital Surgery (Two Referrals)

Hysterectomy and Salpingo-Oophorectomy in FtM Patients and Orchiectomy in MtF Patients:

1. Persistent, well documented gender dysphoria;
2. Capacity to make a fully informed decision and to give consent for treatment;

3. Age of majority in a given country;

4. If significant medical or mental health concerns are present, they must be well controlled;

5. 12 continuous months of hormone therapy as appropriate to the patient's gender goals (unless hormones are not clinically indicated for the individual).

The aim of hormone therapy prior to gonadectomy is primarily to introduce a period of reversible estrogen or testosterone suppression, before a patient undergoes irreversible surgical intervention.

These criteria do not apply to patients who are having these surgical procedures for medical indications other than gender dysphoria.

Metoidioplasty or Phalloplasty in FtM Patients and Vaginoplasty in MtF Patients:

1. Persistent, well documented gender dysphoria;

2. Capacity to make a fully informed decision and to give consent for treatment;

3. Age of majority in a given country;

4. If significant medical or mental health concerns are present, they must be well controlled;

5. 12 continuous months of hormone therapy as appropriate to the patient's gender goals (unless hormones are not clinically indicated for the individual);

6. 12 continuous months of living in a gender role that is congruent with their gender identity.

Although not an explicit criterion, it is recommended that these patients also have regular visits with a mental health or other medical professional.

The criterion noted above for some types of genital surgeries—that is, that patients engage in 12 continuous months of living in a gender role that is congruent with their gender identity—is based on expert clinical consensus that this experience provides ample opportunity for patients to experience and socially adjust in their desired gender role, before undergoing irreversible surgery.

APPENDIX D
EVIDENCE FOR CLINICAL OUTCOMES OF THERAPEUTIC APPROACHES

One of the real supports for any new therapy is an outcome analysis. Because of the controversial nature of sex reassignment surgery, this type of analysis has been very important. Almost all of the outcome studies in this area have been retrospective.

One of the first studies to examine the post-treatment psychosocial outcomes of transsexual patients was done in 1979 at Johns Hopkins University School of Medicine and Hospital (USA) (J. K. Meyer & Reter, 1979). This study focused on patients' occupational, educational, marital, and domiciliary stability. The results revealed several significant changes with treatment. These changes were not seen as positive; rather, they showed that many individuals who had entered the treatment program were no better off or were worse off in many measures after participation in the program. These findings resulted in closure of the treatment program at that hospital/medical school (Abramowitz, 1986).

Subsequently, a significant number of health professionals called for a standard for eligibility for sex reassignment surgery. This led to the formulation of the original *Standards of Care* of the Harry Benjamin International Gender Dysphoria Association (now WPATH) in 1979.

In 1981, Pauly published results from a large retrospective study of people who had undergone sex reassignment surgery. Participants in that study had much better outcomes: Among 83 FtM patients, 80.7% had a satisfactory outcome (i.e., patient self report of "improved social and emotional adjustment"), 6.0% unsatisfactory. Among 283 MtF patients, 71.4% had a satisfactory outcome, 8.1% unsatisfactory. This study included patients who were treated before the publication and use of the *Standards of Care*.

Since the *Standards of Care* have been in place, there has been a steady increase in patient satisfaction and decrease in dissatisfaction with the outcome of sex reassignment surgery. Studies conducted after 1996 focused on patients who were treated according to the *Standards of Care*. The findings of Rehman and colleagues (1999) and Krege and colleagues (2001) are typical of this body of work; none of the patients in these studies regretted having had surgery, and most reported being satisfied with the cosmetic and functional results of the surgery. Even patients who develop severe surgical complications seldom regret having undergone surgery. Quality of surgical results is one of the best predictors of the overall outcome of sex reassignment (Lawrence, 2003). The vast majority of follow-up studies have shown an undeniable beneficial effect of sex reassignment surgery on postoperative outcomes such as subjective well being, cosmesis, and sexual function (De Cuypere et al., 2005; Garaffa, Christopher, & Ralph, 2010; Klein & Gorzalka, 2009), although the specific magnitude of benefit is uncertain from

the currently available evidence. One study (Emory, Cole, Avery, Meyer, & Meyer, 2003) even showed improvement in patient income.

One troubling report (Newfield et al., 2006) documented lower scores on quality of life (measured with the SF-36) for FtM patients than for the general population. A weakness of that study is that it recruited its 384 participants by a general email rather than a systematic approach, and the degree and type of treatment were not recorded. Study participants who were taking testosterone had typically being doing so for less than 5 years. Reported quality of life was higher for patients who had undergone breast/chest surgery than for those who had not ($p<.001$). (A similar analysis was not done for genital surgery.) In other work, Kuhn and colleagues (2009) used the King's Health Questionnaire to assess the quality of life of 55 transsexual patients at 15 years after surgery. Scores were compared to those of 20 healthy female control patients who had undergone abdominal/pelvic surgery in the past. Quality of life scores for transsexual patients were the same or better than those of control patients for some subscales (emotions, sleep, incontinence, symptom severity, and role limitation), but worse in other domains (general health, physical limitation, and personal limitation).

Two long-term observational studies, both retrospective, compared the mortality and psychiatric morbidity of transsexual adults to those of general population samples (Asscheman et al., 2011; Dhejne et al., 2011). An analysis of data from the Swedish National Board of Health and Welfare information registry found that individuals who had received sex reassignment surgery (191 MtF and 133 FtM) had significantly higher rates of mortality, suicide, suicidal behavior, and psychiatric morbidity than those for a nontranssexual control group matched on age, immigrant status, prior psychiatric morbidity, and birth sex (Dhejne et al., 2011). Similarly, a study in the Netherlands reported a higher total mortality rate, including incidence of suicide, in both pre- and post-surgery transsexual patients (966 MtF and 365 MtF) than in the general population of that country (Asscheman et al., 2011). Neither of these studies questioned the efficacy of sex reassignment; indeed, both lacked an adequate comparison group of transsexuals who either did not receive treatment or who received treatment other than genital surgery. Moreover, transsexual people in these studies were treated as far back as the 1970s. However, these findings do emphasize the need to have good long-term psychological and psychiatric care available for this population. More studies are needed that focus on the outcomes of current assessment and treatment approaches for gender dysphoria.

It is difficult to determine the effectiveness of hormones alone in the relief of gender dysphoria. Most studies evaluating the effectiveness of masculinizing/feminizing hormone therapy on gender dysphoria have been conducted with patients who have also undergone sex reassignment surgery. Favorable effects of therapies that included both hormones and surgery were reported in a comprehensive review of over 3000 patients in 79 studies (mostly observational) conducted between 1961 and 1991 (Eldh, Berg, & Gustafsson, 1997; Gijs & Brewaeys, 2007; Murad et al., 2010; Pfäfflin & Junge, 1998). Patients operated on after 1986 did better than those before 1986; this reflects significant improvement in surgical complications (Eldh et al., 1997). Most patients have reported improved psychosocial outcomes, ranging between 87% for MtF patients and 97% for FtM patients (Green & Fleming, 1990).

Similar improvements were found in a Swedish study in which "almost all patients were satisfied with sex reassignment at 5 years, and 86% were assessed by clinicians at follow-up as stable or improved in global functioning" (Johansson, Sundbom, Höjerback, & Bodlund, 2010). Weaknesses of these earlier studies are their retrospective design and use of different criteria to evaluate outcomes.

A prospective study conducted in the Netherlands evaluated 325 consecutive adult and adolescent subjects seeking sex reassignment (Smith, Van Goozen, Kuiper, & Cohen-Kettenis, 2005). Patients who underwent sex reassignment therapy (both hormonal and surgical intervention) showed improvements in their mean gender dysphoria scores, measured by the Utrecht Gender Dysphoria Scale. Scores for body dissatisfaction and psychological function also improved in most categories. Fewer than 2% of patients expressed regret after therapy. This is the largest prospective study to affirm the results from retrospective studies that a combination of hormone therapy and surgery improves gender dysphoria and other areas of psychosocial functioning. There is a need for further research on the effects of hormone therapy without surgery, and without the goal of maximum physical feminization or masculinization.

Overall, studies have been reporting a steady improvement in outcomes as the field becomes more advanced. Outcome research has mainly focused on the outcome of sex reassignment surgery. In current practice there is a range of identity, role, and physical adaptations that could use additional follow-up or outcome research (Institute of Medicine, 2011).

APPENDIX E
DEVELOPMENT PROCESS FOR THE *STANDARDS OF CARE,* VERSION 7

The process of developing *Standards of Care, Version 7* began when an initial *SOC* "work group" was established in 2006. Members were invited to examine specific sections of *SOC, Version 6*. For each section, they were asked to review the relevant literature, identify where research was lacking and needed, and recommend potential revisions to the *SOC* as warranted by new evidence. Invited papers were submitted by the following authors: Aaron Devor, Walter Bockting, George Brown, Michael Brownstein, Peggy Cohen-Kettenis, Griet DeCuypere, Petra DeSutter, Jamie Feldman, Lin Fraser, Arlene Istar Lev, Stephen Levine, Walter Meyer, Heino Meyer-Bahlburg, Stan Monstrey, Loren Schechter, Mick van Trotsenburg, Sam Winter, and Ken Zucker. Some of these authors chose to add co-authors to assist them in their task.

Initial drafts of these papers were due June 1, 2007. Most were completed by September 2007, with the rest completed by the end of 2007. These manuscripts were then submitted to the *International*

Journal of Transgenderism (IJT). Each underwent the regular *IJT* peer review process. The final papers were published in Volume 11 (1–4) in 2009, making them available for discussion and debate.

After these articles were published, an *SOC* Revision Committee was established by the WPATH Board of Directors in 2010. The Revision Committee was first charged with debating and discussing the *IJT* background papers through a Google website. A subgroup of the Revision Committee was appointed by the Board of Directors to serve as the Writing Group. This group was charged with preparing the first draft of *SOC, Version 7* and continuing to work on revisions for consideration by the broader Revision Committee. The Board also appointed an International Advisory Group of transsexual, transgender, and gender-nonconforming individuals to give input on the revision.

A technical writer was hired to (1) review all of the recommendations for revision—both the original recommendations as outlined in the *IJT* articles and additional recommendations that emanated from the online discussion—and (2) create a survey to solicit further input on these potential revisions. From the survey results, the Writing Group was able to discern where these experts stood in terms of areas of agreement and areas in need of more discussion and debate. The technical writer then (3) created a very rough first draft of *SOC, Version 7* for the Writing Group to consider and build on.

The Writing Group met on March 4 and 5, 2011 in a face-to-face expert consultation meeting. They reviewed all recommended changes and debated and came to consensus on various controversial areas. Decisions were made based on the best available science and expert consensus. These decisions were incorporated into the draft, and additional sections were written by the Writing Group with the assistance of the technical writer.

The draft that emerged from the consultation meeting was then circulated among the Writing Group and finalized with the help of the technical writer. Once this initial draft was finalized, it was circulated among the broader *SOC* Revision Committee and the International Advisory Group. Discussion was opened up on the Google website and a conference call was held to resolve issues. Feedback from these groups was considered by the Writing Group, who then made further revisions. Two additional drafts were created and posted on the Google website for consideration by the broader *SOC* Revision Committee and the International Advisory Group. Upon completion of these three iterations of review and revision, the final document was presented to the WPATH Board of Directors for approval. The Board of Directors approved this version on September 14, 2011.

Funding

The *Standards of Care* revision process was made possible through a generous grant from the Tawani Foundation and a gift from an anonymous donor. These funds supported the following:

1. Costs of a professional technical writer;

2. Process of soliciting international input on proposed changes from gender identity professionals and the transgender community;

3. Working meeting of the Writing Group;

4. Process of gathering additional feedback and arriving at final expert consensus from the professional and transgender communities, the *Standards of Care, Version 7,* Revision Committee, and WPATH Board of Directors;

5. Costs of printing and distributing *Standards of Care, Version 7,* and posting a free downloadable copy on the WPATH website;

6. Plenary session to launch the *Standards of Care, Version 7,* at the 2011 WPATH Biennial Symposium in Atlanta, Georgia, USA.

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† All members of the *Standards of Care, Version 7 Revision Committee* donated their time to work on this revision.

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Exhibit 2

IN THE UNITED STATES DISTRICT COURT

DISTRICT OF ARIZONA

RUSSELL B. TOOMEY, Plaintiff, vs. STATE OF ARIZONA; ARIZONA BOARD OF REGENTS, D/B/A UNIVERSITY OF ARIZONA, a governmental body of the State of Arizona; et al., Defendants.	)	4:19-cv-00035

VIDEOTAPED DEPOSITION OF KELLY SHARRITTS

Via Zoom videoconference
April 22, 2021
8:34 a.m.

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the one involved in doing that.

Q. Why would your assumption be that they were shared with the governor's office?

A. It was for the point of it going up to the legislature for it to pass in the budgeting and all that process that the government goes through.

Q. What types of decisions, if any, were required to be reviewed by the State legislature?

A. I would not be able to clearly tell you that. That's up to the government laws.

Q. What types of content was usually in the presentations that you were preparing to ultimately be shared with the State legislature?

A. We would put in plan design changes, plan premium costs, employer or -- I say employer, but State-funded by area -- by the different divisions, plan design structure, wellness initiatives. That's all I recall at the moment.

Q. You mentioned plan design changes. Do you remember any changes to the plan that did not involve you creating a presentation to be shared with the State legislature?

A. Not that I can recall today.

Q. Did you ever prepare a report or presentation on the coverage of transgender benefits?

A. I know I -- I did a lot of research and emails

Q. Are you familiar with this exclusion?
A. Yes.
Q. Do you remember how you first learned of the exclusion?
A. I believe that only -- when it got brought to my attention was when one of the universities reached out for information on it and so Marie asked me to research it to see if we were being discriminatory in our plan design or not. And so we had to research it and figure out what the rules were and what it would mean.
Q. Do you remember which university reached out to the ADOA about this exclusion?
A. I don't recall. I get the two mixed up all the time.
Q. Which two do you mean?
A. Is it Arizona State University and -- U of A, ASU. Those two.
Q. Is U of A the University of Arizona?
A. Yes.
Q. And ASU would be Arizona State University?
A. Yes.
Q. So you think one of these universities reached out to Marie Isaacson; is that right?
A. Someone reached out from the university to someone and Marie reached out to me. So it got -- I don't

know what the exact trickle was. But Marie reached out to our department -- or to our team to look into it.

Q. Do you remember around when Marie Isaacson reached out to your team to look into coverage of this exclusion?

A. It was, I would say, mid to late 2015.

Q. Do you remember how long you had been working at the ADOA when you were first approached about this issue?

A. I would say roughly six months. Somewhere in that range.

Q. Now -- Oh, before we move on, do you remember learning about the history of how this exclusion first came to exist in the ADOA plan?

A. I don't recall knowing how it started. I just was looking at does it stay.

Q. Did you know how long it had been part of the ADOA plan?

A. I don't recall that answer.

Q. Did it seem like something that had just been added, from the conversations you were having?

A. I wouldn't be able to infer that. I don't know.

Q. And when Marie Isaacson reached out to your team to assess whether the ADOA should maintain this exclusion as written in the 2016 plan, what specifically did you take her to be asking for?

knee-jerk decision and that they have committed to this lifestyle.

MS. SHEETS: I'd like to propose that we take about a ten-minute break at this point. Could we go off the record.

THE VIDEOGRAPHER: Off the record at 10:53 a.m.

(Recess.)

THE VIDEOGRAPHER: Back on the record at 11:11 a.m.

Please proceed when ready.

Did she hear me?

MR. CURTIS: We are --

Q. BY MS. SHEETS: Ms. Sharritts --

MR. CURTIS: Oh, sorry. Go ahead.

Q. BY MS. SHEETS: Ms. Sharritts, would you please turn to Tab 28 in your binder. This has been marked as Sharritts Exhibit 28 and in the bottom right-hand corner is AZSTATE.151707. So Ms. Sharritts, this is a chart labeled "Transgender Reassignment Surgery." Do you recognize this document?

A. It's a format of documents that is familiar to me. I personally can't recall this specific one.

Q. Were you shown this document in preparation for the deposition today?

A. No.

Doesn't mean I didn't see it when I worked there, but I don't recall seeing it.

Q. Would you turn to Pages 10 and 11 of this chart. Do you recognize this section on Pages 10 and 11 that reads "ADOA Analysis"?

A. This looks like a format I would have put together. I may have done this one.

Q. Do you know whether or not you put this ADOA analysis section together?

A. I feel like it was me that did this. It's been a long time. I've done a lot of spreadsheets.

Q. If you could turn to Tab 5. This has been marked as Sharritts Exhibit 5 and the Bates reads AZSTATE.006152.

A. Yes.

Q. Ms. Sharritts, this is an email that you sent to Marie Isaacson, copying Michael Meisner. Subject "Transgender Coverage," that attaches what looks to be an Excel sheet labeled "Transgender Coverage Analysis."

Do you see that?

A. Yes.

Q. And if you flip to that attachment behind the blue slip sheet do you see --

A. That was mine.

Q. -- do you see what appears to be the same chart

that was on Pages 10 and 11 of Sharritts 28, the document we previously looked at?

A. Yes.

Q. Does this look to be your work?

A. Yes. If that's what was attached to this, that is my work.

Q. Does this look similar to Pages 10 and 11 of the Sharritts 28 chart that we previously looked at?

A. Yes.

Q. If you flip the page you'll see -- Now, in the Excel this is labeled, quote, summary of research. It's a separate tab and it starts [as read]: From the sources quickly available on the internet, most studies --

Do you see that?

A. Yes. I do see that.

Q. And the rest of that sentence is [as read]: Most studies find that utilization and cost of covering transgender hormones, surgery, medication, and/or mental health have an immaterial impact on health plans. Is that right?

A. Correct.

Q. Did you write this summary of research?

A. Yes. This was my research that I did.

Q. Do you remember sending this research to Marie Isaacson and Michael Meisner?

A. Yes.

Q. In the bottom of the summary it states that [as read]: Utilization estimates range from one to 11 claims per year.

Do you see that?

A. Yes.

Q. Do you remember how you came to that conclusion?

A. I would have to say it's probably in the detail that was in here at the time, (indecipherable) research.

THE COURT REPORTER: I'm sorry, at the time something research?

THE WITNESS: Based on the research.

I'd have to go back through all my research to know where exactly I pulled that from.

Q. BY MS. SHEETS: So I'll give you a minute to look back through this summary of research. Just give it a -- a read and see if you remember what research led you to these conclusions.

A. So it looks like I got the one to seven claims per year from the San Francisco data. And at the University of California there was an estimated 11 claims, so that's probably where I got the one through 11. That was the minimum and the maximum that I had found.

Q. How could you be sure that the estimates from San Francisco and University of California would be

wrong, that the ADOA decided this was a grey area and then moved on to the second question. So taking aside whether or not they were legally required to cover these benefits, the ADOA considered, as you stated, do we want to? Should we or should we not cover the benefits? And I want to be clear that that's the portion of the analysis that we're talking about now.

So in that second part of the analysis, so put aside whether or not it was legally required, what factors were considered by the ADOA?

A. I would say costs and what the trend of other states and public sectors were.

Q. Ms. Sharritts, were you -- do you remember discussion about coverage of 3D mammography while you were at the ADOA?

A. I have a vague recollection -- recollection. I can't say that word. I have a vague memory of that.

Q. And do you remember that the ADOA decided to cover 3D mammography?

A. I believe so, yes.

Q. Do you remember that -- There was no legal requirement to cover 3D mammography; right?

A. Correct.

Q. So the ADOA's approach to deciding whether or not it would cover 3D mammography is different from the

defined response. And over time we all came to accept it and -- and to cover those things.

That's -- I feel like transgender benefits are going to do the same thing. It's just something new and unknown to a large population of people and it's going to take time for that to evolve to become generally accepted.

Q. We talked about the perception of others generally in society. And now I want to talk about the perception of those people who you were working with at the ADOA at the time this decision was made.

You were working with Marie Isaacson; is that right?

A. Yes.

Q. Do you remember any conversations with Marie Isaacson in which she expressed her personal opinion on whether it was necessary to cover transgender benefits in her view?

A. I don't believe I ever got her personal opinion on the topic.

Q. Do you remember a conversation with Marie Isaacson that Michael Meisner would have been present for in your office when Marie Isaacson popped her head in and then you told her your view of the ADOA covering transgender benefits?

MR. CURTIS: Objection; form of the question.

MS. SHEETS: You can answer.

THE WITNESS: I don't specifically recall that. But I also know I am open with my opinion and so I probably would have shared that I thought the cost was minuscule and it doesn't seem like there's an obvious reason not to cover it other than what the State feels on it.

Q. BY MS. SHEETS: When you say that cost was minuscule, can you say more about that?

A. From my analysis, it was less than a dollar per member for their premium to cover it. Yes, the cost was a lot, but you have 136,000 members that you can spread that cost around. It ended up being less than a dollar, potentially pennies, to the plan on a per-person basis. So I didn't feel like that was a driver to make a decision on.

Q. So the cost, as you calculated it, didn't make sense to rely on as a driving factor for why not to cover transgender benefits; is that right?

A. Correct. And from the other resources, the other states I talked to, most of them said it was a negligible impact to their plan when it came to cost.

Q. What was Marie Isaacson's response to your

Exhibit 3

UNITED STATES DISTRICT COURT
DISTRICT OF ARIZONA

RUSSELL B. TOOMEY,

Plaintiff,

v.

STATE OF ARIZONA; ARIZONA BOARD OF REGENTS, D/B/A UNIVERSITY OF ARIZONA, a governmental body of the State of Arizona; RON SHOOPMAN,in his official capacity as chair of the Arizona Board Of Regents; LARRY PENLEY, in his official capacity as Member of the Arizona Board of Regents; RAM KRISHNA, in his official capacity as Secretary of the Arizona Board of Regents; BILL RIDENOUR,in his official capacity as Treasurer of the Arizona Board of Regents; LYNDEL MANSON, in her official capacity as Member of the Arizona Board of Regents; KARRIN TAYLOR ROBSON, in her official capacity as Member of the Arizona Board of Regents; JAY HEILER, in his official capacity as Member of the Arizona Board of Regents; FRED DUVAL, in his official capacity as Member of the Arizona Board of Regents; ANDY TOBIN, in his official capacity as Director of the Arizona Department of Administration; PAUL SHANNON, in his official capacity as Acting Assistant Director of the Benefit Services Division of the Arizona Department of Administration,

Defendants.

Cause No.

No.

4:19-cv-00035

VIDEOTAPED VIDEOCONFERENCE DEPOSITION

OF CRAIG BROWN

BE IT REMEMBERED, the Deposition Under Oath of CRAIG BROWN was taken by MR. JORDAN C. WALL, Attorney at Law, for the Plaintiff, at the offices of Hazlett Reporting & Legal Video Services at 140 Second Avenue West, Suite B, Kalispell, Montana, on Tuesday, June 22, 2021, beginning at the hour of 9:35 A.M. Reported by Stacy M. Baldwin, Registered Merit Reporter and Notary Public.

that. But in this one it's clearly Marie Isaacson and the plan sponsor.

Q Mr. Brown, what do you understand the Benefit Services Division of the ADOA's obligations under the plan to be as plan sponsor?

A Well, I think we talked about that already, which was to take the plan benefits as designed, get suppliers to make available that capability, the insurance providers, set the rate for which employees need to donate at and then fill the gap with the JLBC's legislative bucket to make the plan work. And then monitor, collect payments and all of the above. Right? So, those are the things that got to come together.

Q Do you understand that, as the Benefit Services Division, the ADOA's responsibility as plan sponsor to -- among the responsibilities include establishing the policies, interpretations, practices and procedures of this plan and issuing interpretations thereof?

A I guess that would be part of the scope too, yes.

Q And so, just to be clear, you agree that would be part of the work of the Benefit Services Division as plan sponsor of the plan?

A Specifically restating those set policy -- what other elements did you say?

Q Establishing the policies, interpretations, practices and procedures of this plan, issuing interpretations thereof.

A Yes.

Q Would that --

A I don't know about the interpretations thereof. But, yes, the policy and that would be part of their role to do that as well.

Q Would turn to Page 75 of this document, Exhibit 2 that we're in, ending in Bates No. 010169.

A Got it.

Q And I'm looking -- and this is Article 13, Administration. I'm looking under Section 13.1, Plan Sponsor's Responsibilities, and specifically Item 2. Do you see that?

A Yes.

Q Do you see that it states that among the plan sponsor's responsibilities are "establishing the policies, interpretations, practices and procedures of this plan and issuing interpretations thereof"?

A Yes.

Q And do you have any reason to doubt that the Benefit Services Division of the ADOA as plan sponsor, that that was among its responsibilities?

A I think this makes it clear it's part of their

responsibility.

Q And also I'm looking -- and would that include, then, decisions on whether to maintain or remove a plan's exclusion?

A I suppose so.

Q When you say "suppose so," are you agreeing, Mr. Brown, or do you have reason to doubt that?

A Well, I don't know if -- I mean, I think legal needs to be part of -- I mean, the Benefit Services can't just make up all the rules and what they want to do. I think they also have some rule and law boundaries that have been put around their role, and legal would have need to buy off on that kind of stuff.

So, they don't have cart blanche to do whatever they want, if it's written in the rules otherwise. I haven't seen the rules. I'm just saying they don't -- they have limits around what they can do, perhaps, is what I'm saying.

Q What rules are you referring to, Mr. Brown?

A No specific rule. I know that each division would have rules about what is required for them to execute their performance of their role.

Q Would these rules be written down anywhere?

A Should be. I don't know where they would be.

Q Have you ever seen these rules for the Benefit

THE WITNESS: There that's better. Yes.
BY MR. WALL:
Q Great. So, as you can see here, this is Article 9 of the 2015 EPO Plan document, Exclusions and General Limitations. And in particular, I'm reading that very first section, 9.1; Exclusions and General Limitations, which reads: "Any services and supplies which for not described as covered or are specifically excluded in any other Article in this plan description are excluded. In addition, the following are specifically excluded services and supplies."
Do you see that?
A Yes.
Q And do you see what follows is a numbered list?
A Yes.
Q All right. We're going to go back to Page 69, and look at number, what is 16, on this list.
So, I'm reading at exclusion No. 16, in the 2015 EPO Plan document: "Transsexual surgery including medical or psychological counseling and hormonal therapy in preparation for, or subsequent, to any such surgery."
Did I read that accurately?
A Yes.
Q Does this language in exclusion 16, comport with your understanding of the plan's exclusion of

transgender benefits in 2015, when you began as the director of ADOA?

A I didn't have any conversation or knowledge of this topic in 2015, when I started at DOA. My first introduction was in the introduction of the claim from Marie, more mid 2016, where she talked about these three terms. The first time I'd known that this was an issue within the state.

Q So to clarify, Mr. Brown, you didn't know about this exclusion when you started as director in September 2015 --

A Correct.

Q -- correct?

A Yes, correct.

Q But at some point in 2016, you spoke with Ms. Isaacson and she informed you that the plan contained this exclusion, correct?

A Yes.

Q All right. So, for purposes of our conversation, when I refer to transgender benefits going forward, I'm going to be referring to this particular definition or variations thereof, as we'll see in later plan documents. Okay?

A Okay.

Q Now, do you recall, Mr. Brown, whether this

Q Is this your first time learning that someone at the ADOA did an analysis of the potential cost of covering transgender benefits, such as this, and with these results?

A Yes.

Q Would you consider an average annual cost of $130,000 to $582,000, or .02 percent to .08 percent, of the then 71 million estimated medical cost to the plan to be significant?

A From a raw cost standpoint, that is not a significant increase.

Q And would you consider the $0.17 to $0.77 increase in cost per month, per employee, to be significant?

A No.

MR. WALL: Would you, Mr. Villa, now open up what is labelled Tab 37B, in the electronic record circulated before the deposition.

(Whereupon, Mr. Villa complied with the request.)

MR. WALL: And I would ask the Madame Reporter to mark this down at Exhibit 14.

(Exhibit 14 marked for identification.)

MR. WALL: And I will represent that the Bates Number for this document, although it's not stamped

Exhibit 4

IN THE UNITED STATES DISTRICT COURT

DISTRICT OF ARIZONA

RUSSELL B. TOOMEY, Plaintiff, vs. STATE OF ARIZONA; ARIZONA BOARD OF REGENTS, D/B/A UNIVERSITY OF ARIZONA, a governmental body of the State of Arizona; et al., Defendants.	)	4:19-cv-00035

VIDEOTAPED DEPOSITION OF ELIZABETH MARIE SCHAFER

Via Zoom videoconference
April 28, 2021
8:33 a.m.

Glennie Reporting Services, LLC
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Prepared by:

Jill Marnell, RPR
Arizona Certified
Reporter No. 50021

A. I was a -- became a plan adviser in October 2016 I believe.

Q. And what was your job responsibility in that role as plan adviser?

A. Plan adviser or plan administrator?

Q. I'm sorry, I may have gotten that wrong. So in 2010 your role was plan adviser or plan administrator?

A. Plan administrator.

Q. Okay.

A. I managed -- To be honest, I don't really remember very well anymore. But I had the life contracts. I always had flexible spending. I always had the dental contracts. And I handled one medical contract with Aetna.

Q. And how long were you -- were you a plan administrator?

A. I was a plan administrator until I left in January of 2018.

Q. So to summarize, you worked at the ADOA from October 2006 until January of 2018?

A. Correct.

Q. And more specifically, you started working at -- in the benefit services division in the ADOA in April of 2007; is that correct?

A. Yes.

Q. And you worked in the benefit service division

from April of 2007 until you left the ADOA in January of 2018; is that correct?

A. That is correct.

Q. And in your various roles in the benefit service division did you work with the State of Arizona's healthcare plan?

A. I did.

Q. Would you say you became familiar with the State of Arizona's healthcare plan?

A. Yes.

Q. And were you involved in administering the State of Arizona's healthcare plan?

A. Yes.

Q. Were you involved in making changes to the plan?

A. I was not a decision maker on making changes, but I was involved in -- in meetings that involved, you know, what are the possibilities? Any suggestions of what could be changed? Things like that.

Q. So is it fair to say you were involved in the process of making changes to the plan but you were not yourself a decision maker?

A. Correct.

Q. And who were the decision makers?

A. Scott Bender is the director of benefits so ultimately it usually was Marie who was the director of

benefits, or the director of ADOA, and sometimes it went above that.

Q. Okay. So I have Scott Bender, I have Marie Isaacson, and then who would have been above Marie Isaacson?

A. I don't remember the guy's name, to be honest, when I was there. So if you threw him out I'm sure I would remember but I don't remember the director. We had a couple changes, especially when Governor Ducey took over, so I don't remember all the changes there.

Q. So to be clear, Marie Isaacson was for a time the director of the benefit services division of the ADOA?

A. Correct.

Q. And above her there was a director -- there were various directors of the ADOA?

A. Correct.

Q. And Marie Isaacson reported to the director of the ADOA?

A. Yes.

Q. Does the name Craig Brown sound familiar to you?

A. Yes.

Q. Is it possible that he was the director or one of the directors of the ADOA?

A. Yes.

Q. And about when do you remember him being a

A. It is.

Q. And it covers cosmetic surgery when that surgery constitutes necessary care; is that correct?

A. Correct.

Q. Okay. I would like to go to -- Well, actually, let me ask this question.

To your knowledge was the ADOA required by law or regulation to cover cosmetic surgery?

A. To my knowledge?

Q. Yeah, sorry. To your knowledge was the ADOA required to cover any cosmetic surgery?

A. You have to realize I retired and forgot a lot of stuff. But yes, there is -- there are times -- there have been some very specific laws where it is required. So, yes, like I believe reconstruction surgery after breast cancer and that kind of stuff. Children's and -- the women's and children's act or something to that effect.

Q. I would like to turn to, on the same page, Section 8.17, which is chiropractic care services. So we won't read all of this, but is it fair to say that in some circumstances the ADOA covers chiropractic care services?

A. It is.

Q. And to your knowledge was the ADOA required by law or regulation to cover chiropractic care services?

A. No.

Q. Okay. I would like you to take a couple minutes and flip through. And the question I want to get at here is -- and I'll put it this way. Does ADOA only cover things when it is required to cover them?

MR. CURTIS: Objection; form of the question.

MR. GARBACZ: You can answer, Ms. Schafer.

THE WITNESS: Can you give me the question again.

Q. BY MR. GARBACZ: Sure. I'll make it more clear. So we'll -- we'll use chiropractic care services.

You said that the ADOA was not required to cover chiropractic care services, and yet it covers chiropractic care services as evidenced by Section 8.17 of the plan; is that correct?

A. Correct.

Q. So ADOA covers some benefits even when it is not required by law or regulation to cover them.

A. Yes.

Q. And there may be some benefits that ADOA covers only because law or regulation requires them to cover it; is that right?

A. Yes.

Q. I would like you to take a minute and just flip through this section Article 8, and see if you can point

out any other benefits here that you know the ADOA was not required by law or regulation to cover, but it covered voluntarily.

MR. CURTIS: Objection to the form of the question.

THE WITNESS: Yeah, and I -- I mean, I can look through, but I'm no expert on law of what has to be covered by the plans. And because a lot of stuff is required under ERISA and stuff and -- and the State plan was not a ERISA plan, it gets kind of hazy sometimes.

I mean, dental, some plans will cover more dental than others. Diabetic, some -- some plans will cover a lot more in diabetic because it's one of the larger killers and drivers of medical costs in the United States. So almost everything you could cover more of. I mean --

Q. BY MR. GARBACZ: So -- so let's -- let's just take dental for -- as an example.

A. Uh-huh.

Q. To your knowledge is ADOA required to cover any dental coverage?

A. Not to my knowledge, no.

Q. Okay. Let's turn to Page 40. And in the bottom right-hand corner you should see AZSTATE.008982.

Do you see that?

Do you see that?

A. I do.

Q. So this article, Article 9, describes prescription drug benefits that are covered under the plan; is that right?

A. Correct.

Q. And we won't go into a whole lot of detail here but I just want to get your sense of what prescription drugs are covered by the ADOA. Can you think of any examples of prescription drugs that the ADOA covers?

MR. CURTIS: Objection to the form of the question.

You can answer.

THE WITNESS: Huge, most drugs.

Q. BY MR. GARBACZ: Can you think of any examples just to familiarize me?

A. With things -- the drugs that are covered?

Q. Yes, a prescription drug that the ADOA would cover.

A. I would say 90 percent of drugs that are used to -- for most medical conditions as long as it's been -- it's recognized by the FDA. It's easier to ask the opposite question.

Q. Got it.

Is the ADOA required to cover, as you say,

90 percent of prescription drugs or are some of those drugs covered voluntarily?

MR. CURTIS: Objection to the form of the question.

THE WITNESS: Yes, they are -- Yes.

Q. BY MR. GARBACZ: Sorry. Let me make my question more clear.

So ADOA you said covers about 90 percent of prescription drugs; is that right?

A. That percentage is really just me grabbing something out of the air. I --

Q. So that -- I mean, that -- that estimate is based on your knowledge. You would ballpark that ADOA covers something like 90 percent of prescription drugs; is that right?

A. I -- What I can tell you from working not only with the ADOA plan and then I have worked with -- my last employer was the County, that ADOA's plan is very generous on the types of medication that they cover. They have a very wide formulary.

Q. And when you say very generous, do you mean that the ADOA covers things that other providers do not -- or other self-funded plans do not cover?

A. Not -- no, not necessarily but it covers a wider range of medication. Usually you try and only cover --

you know, you have to have a minimum of, you know, a certain number of drugs for a certain condition. ADOA has a very broad number usually.

Q. So it might have more than one drug available for any given condition; is that right?

A. Correct. Like if you had high cholesterol a lot of plans would require you to use the generic version of a certain plan -- medication. So ADOA has a very large -- a very broad formulary.

Q. And is that -- is it required to have a very broad coverage or is it -- does it elect to have very broad coverage?

A. It has elected to have it in the past. Again, I left in 2018. And the pharmacy is the largest spend for medical plans, so I am sure that they are tightening that baby down as fast as they can because the expenses are so huge.

Q. But it's fair to say that ADOA covers some prescription drugs that it is not required to cover.

A. Probably --

Q. Is that right?

A. -- yes. Probably.

Q. I'm going to use Humira as an example. Do you know whether ADOA covers the prescription drug Humira?

A. I would have to ask you what Humira is treatment

for. I don't -- I'm going to say probably yes, but -- and I know that's a very common name but, again, my mind has gone blank on what Humira is used for.

Q. That's okay.

You had mentioned that ADOA is very generous with prescription drugs under the plan. What did you mean by that exactly?

A. A lot of times you will work for employers that formulary is as tight as can be, which means they will offer just the minimum amount of coverage that they have or they will -- if there is a generic they will require you use the generic. And ADOA in the past has been very generous in allowing you to use the brand. That's just an example. But, you know, there can be 20 different medications to -- to handle, you know, high blood pressure and, you know, one plan may say you can use one -- one of these ten; another plan will say you can use all 20. And ADOA has a -- a very generous formulary. I don't know how else to say it.

Q. So there are -- there are other self-funded plans that will only cover the -- the minimal amount, say, for example, they will only cover the generic version of a specific drug, whereas ADOA will oftentimes cover the generic drug and certain name-brand drugs which are more expensive; is that right?

A. Yes.

Q. Other than prescription drugs can you think of any other area in the plan where ADOA is generous? Meaning, are there any other areas where ADOA -- ADOA's self-funded plan covers more than other self-funded plans?

A. Again, that's a huge question. Nothing is like standing out. I mean, they try and -- and remain very competitive. So they're going to try and make sure they're meeting the market, what most people are getting from their plan.

Q. What do you mean by competitive? What does that mean?

A. Well, benefits is a way to retain employees. So as a State employee you don't get a lot of benefits other than your retirement or your health insurance. So you try -- we -- At least when I worked for the benefits department we tried very hard to make sure we were meeting -- you know, we met most of the book of business coverages and things like that.

Q. So would that mean if the trend is to cover a particular benefit, that ADOA, in order to be competitive, would want to cover that benefit?

A. In some cases, yes. It depends on how expensive it is, but yes. I mean, you always have to -- We always had to look at the -- the -- the cost as a whole. Are you

MR. CURTIS: Objection; form of the question.

THE WITNESS: I am not an expert. But yes, it sounds -- What I know of the subject, yes.

Q. BY MR. GARBACZ: Okay. Do you know if hysterectomy, for example, is a type of surgery that might constitute gender reassignment surgery?

A. Sounds like something that could, yes.

Q. Okay. Ms. Schafer, I will represent to you that the plaintiff in this case, Dr. Toomey, who's a member under the plan, was seeking to have a hysterectomy and the hysterectomy was denied under this exclusion. So I'm representing to you that a hysterectomy is one of several surgeries, as you alluded to, that might constitute gender reassignment surgery.

With that in mind, does ADOA generally cover hysterectomies?

A. If they're medically necessary, yes.

Q. Okay. So if a hysterectomy -- So ADOA does not cover all hysterectomies. It only covers hysterectomies that are determined by a third-party administrator to be medically necessary; is that right?

MR. CURTIS: Objection; form of the question.

THE WITNESS: Correct.

Q. BY MR. GARBACZ: But there's an exception to that. So there's an exception to the exception. Which is, ADOA covers hysterectomies when they are medically necessary, but not if the medical necessity is due to the patient's need -- or the patient's gender dysphoria?

MR. CURTIS: Objection; form of the question.

THE WITNESS: I'm not sure, but yes.

Q. BY MR. GARBACZ: So let me -- let me -- I know this is a little complicated, so I'll try to make it a little more clear.

So a hysterectomy is a procedure; correct?

A. Yes.

Q. And are you aware of -- have you heard of a CPT code before?

A. Yes.

Q. Have you heard of a diagnosis code before?

A. Yes.

Q. So when something is being covered, someone goes to their doctor, their doctor generally gives a diagnosis code and a CPT code, a procedure code; is that right?

A. Yes.

Q. So say, for example, a woman has ovarian cancer. She goes to her doctor. The doctor says you -- I am -- I'm prescribing -- or I order that you have a hysterectomy

and there's two codes. The diagnosis code would be whatever the diagnosis code is for ovarian cancer. And the procedure code would be hysterectomy; is that right?

MR. CURTIS: Objection; form of the question.

THE WITNESS: That sounds correct.

Q. BY MR. GARBACZ: And is it your understanding that if someone went to their doctor and the diagnosis was ovarian cancer and the procedure that was prescribed to treat that ovarian cancer was a hysterectomy, that that would be determined -- the procedure would qualify as medically necessary? The hysterectomy would be medically necessary; is that right?

MR. CURTIS: Objection; form of the question.

THE WITNESS: The TPA or your medical directors would have to determine that. I -- I'm sorry, I'm hung up on the fact that you're saying ovarian and hysterectomy, and they are not exactly the same organ.

Q. BY MR. GARBACZ: Okay. So I have that off. So let's step back to the particular type of cancer and let's just say you have cancer -- or the patient has cancer and the diagnosis code is cancer and the procedure code is hysterectomy. In other words, the doctor is prescribing a hysterectomy to treat the diagnosis which is cancer.

A. Yes.

Q. Is it your understanding that that would qualify as medically necessary?

MR. CURTIS: Objection; form of the question.

THE WITNESS: It certainly sounds like something that should, but again, that's why we have a medical vendor.

Q. BY MR. GARBACZ: Okay. So let's suppose that it was -- Let's say that the third-party administrator does determine that this procedure is medically necessary. Would it be covered under the ADOA's plan?

A. Yes.

Q. Because it is -- because the ADOA covers hysterectomies when they are medically necessary; is that correct?

A. Correct.

MR. CURTIS: Objection; form of the question.

THE WITNESS: Correct.

Q. BY MR. GARBACZ: Okay. Now I'm going to change only one variable in that hypothetical. Let's say you go to your doctor and the doctor prescribes hysterectomy for you so the procedure -- so the procedure code is hysterectomy. But the doctor is not prescribing a

hysterectomy because you have cancer, the doctor is prescribing a hysterectomy because you have gender dysphoria and a hysterectomy is being used to treat your gender dysphoria.

Do you follow my hypothetical so far?

A. I do.

Q. And let's take it one step further and suppose that the third-party administrator looks at that and determines that the procedure is medically necessary. In other words, the hysterectomy is medically necessary to treat gender dysphoria for this particular patient.

Does that make sense?

A. Yes.

Q. Now, my question for you is, would that procedure be covered or denied under the ADOA's plan?

A. The exact scenario you just -- I'm sorry, are we still on the exact hysterectomy one or is this a more generic question?

Q. We're on the hysterectomy. So --

A. Yeah.

Q. -- I know there's a lot of variables here. So a hysterectomy is a type of surgery that can constitute gender -- gender reassignment surgery. In this hypothetical, hysterectomy is being used to treat gender dysphoria. In other words, it's being used as a gender

reassignment surgery.

A. Uh-huh.

Q. Because it constitutes gender reassignment surgery, would it be excluded under the plan under this Number 16, gender reassignment surgery?

A. Yes.

Q. Okay. So that was -- I wanted to go through that exercise to -- to point out the disparity here between a hysterectomy which is covered in some situations but not others. And in both situations it's medically necessary, right? It's medically necessary for the patient who has sought -- who was prescribed a hysterectomy because they have cancer and over here it's necessary because it was medically necessary to treat gender dysphoria. But in one situation it's covered and in the other situation it's not.

Do you see the difference?

A. Yes.

Q. So the difference there depends on the diagnosis code; right? The difference -- it's -- it's not that ADOA doesn't cover hysterectomies. As we just established, ADOA covers hysterectomies when they are medically necessary; isn't that right?

A. Correct.

Q. But if the reason for the medical necessity is

area.

Q. And are you referring to changes that came down in 2015 and 2016 and specifically changes under Section 1 -- 1557 of the ACA?

A. Yes.

Q. Okay. We're going to get there in a minute. We're going to turn -- we're going to turn to some documents from 2015 and '16. But for now I want to be a little bit more specific.

Prior to 2015 and '16 when there was a change regarding 1557 of the ACA, prior to that were you aware of this exclusion for transsexual surgery?

A. I -- To be honest, I don't think we ever had any -- anything came across my desk, so we weren't getting complaints or anything about that. At -- at least sent to me.

Q. So were you aware that the plan excluded transsexual surgery prior to 2015?

A. Actually, I don't think I was. I -- I didn't -- I don't remember it being talked about much.

Q. Do you know why the exclusion was in the policy? What was the rationale for the exclusion?

A. I have no idea.

Q. Do you have any idea when the exclusion was first introduced into the plan?

A. If I were to guess, as long as I was at ADOA it was there. But I don't actually know for a fact.

Q. Okay. So to your knowledge this exclusion for transsexual surgery was in the plan for as long as you can remember and you're not aware of the rationale for why that exclusion was in the plan?

A. Correct.

Q. Okay. You mentioned that you hadn't heard any complaints. So I just want to be very clear about that. You never -- You don't remember any instances where any member or employee raised an issue with the transsexual surgery exclusion prior to 2015?

A. No. I mean, it could have been something that was once we told them it was excluded, we -- we -- you know, we didn't spend much time on it but -- but I don't remember it.

Q. If there was a complaint from an employee, for example, or another member, would you have known about it necessarily or is it possible that the exclusion -- or that complaint would not have come to your attention?

A. It's possible that it would not have come to my attention. Kind of depends on how it came.

Q. So what things generally came to your attention?

A. It would have had to have been, you know, like (indecipherable) was really pushing it and they had gone

that added coverage to the policy, for example, removing an exclusion or adding a new benefit. Can you think of any other instances where, in your time at the ADOA, the plan was modified to remove an exclusion or to add a benefit?

A. I mean, changes were made every single year on those plans. But, no, I can't -- I don't remember anything sticking out as to suddenly being covered, no.

Q. Do you remember a change in the plan to cover 3D mammography?

A. Yes.

Q. What do you remember about the change to cover 3D mammography?

A. And that was like right before I left so I'm assuming it was around 2017. I just know that the vendors recommended that it be covered and that then we had -- we have what's called medical directors meetings. They used to be quarterly but they were down to maybe once a year by the time I left, and I believe most of the medical directors for the vendors felt that a 3D was more appropriate.

Q. And so the ADOA ultimately modified the plan so that it would cover 3D mammography?

A. Yes.

Q. And that, to your recollection, happened likely

in 2017?

A. Yes, or it could have been '18.

Q. And I want to go over exactly why the ADOA made that change. So why -- why in your view did the ADOA modify the plan to cover 3D mammography?

A. I, again, don't really remember a lot of specifics about it. I do think on the -- The ADOA plan had four vendors. So we were always struggling to make sure the coverages were very consistent across and it didn't matter which plan you were on, you should have gotten the same exact coverages. And I seem to remember one vendor started covering 3D before the others so we had to try and figure out if it was appropriate. But I don't really have a lot of memories about that.

Q. Okay. So would you say that recommendation of the vendors is one of the reasons why ADOA decided to cover 3D mammography?

A. Yes.

Q. What other factors or criteria did ADOA consider when deciding whether or not to cover 3D mammography? So I have recommendation of the vendors. Was there anything else that influenced the decision?

A. I seem to remember there might have been some analysis of you have to get a 3D anyways if the 2D showed certain things, so you ended up having to go back in and

Q. So sitting here today you do not know whether 3D mammography was considered an expensive benefit to the ADOA?

A. My assumption is it's probably more expensive than a 2D, but I don't think it was hugely more expensive but I do not know. I've never looked at the claim.

Q. So to your knowledge did cost weigh into the decision-making at all?

A. Cost usually weighed into most decisions at ADOA. So I would say it probably did.

Q. What about trend; was the trend to cover 3D mammography?

A. It was becoming more common in the industry, yes.

Q. And do you think that that might have had an influence on the ADOA's decision?

A. Possibly, yes.

Q. But you're not sure?

A. No.

Q. Okay. Medical necessity; do you think or is it your understanding that a 3D mammography can be medically necessary?

A. Yes.

Q. And did the fact that a 3D mammography can be medically necessary weigh into the decision-making, to your knowledge?

this -- or the first email, so you can turn to the base email which is on little Bates AZSTATE.006076.

Do you see that?

A. I do.

Q. This is an email from Yvette Medina to Jay Dash at Aetna, Colette Severns at Blue Cross Blue Shield, Amy Clatterbuck at UHC, and others, and you and Marie Isaacson are copied on the email.

Do you see that?

A. I do.

Q. So take a minute to review this email.

A. Okay.

Q. And so Yvette Medina is reaching out to the four vendors in this email regarding transgender reassignment; is that correct?

A. Correct.

Q. Why in your -- To your knowledge, why is Yvette Medina reaching out to ADOA's vendors about transgender reassignment?

A. She's probably looking for their experience with the book of business. So we're trying to figure out what are, you know, other health plans doing and how are they covering the procedure.

Q. And what prompted, to your knowledge, Yvette Medina to do that?

A. Back in 2015, I -- I'm not sure. I know the Affordable Care Act prompted a lot of it.

Q. So this likely could have had something to do with the Affordable Care Act?

A. Yes.

Q. If we look at the next email which is from Marie to the vendors on October 25th, 2015, Marie says [as read]: All, as you are probably aware, the HHS issued a proposed rule on Section 1557 of the ACA. Section 1557 prohibits discrimination but is open for comment through November. For your convenience the link to the proposed rule is below.

And then Marie says [as read]: Please advise how you believe this rule, if passed as proposed, will impact your business and its impact to the State under our current contracts with your organization.

Do you see that?

A. I do.

Q. So does this refresh your memory as to why ADOA was reaching out in 2015 regarding transgender reassignment?

A. Yes.

Q. And why was ADOA reaching out in 2015 in -- specifically in October of 2015 regarding transgender reassignment?

A. Because they -- we were being notified that this change was coming and I believe they were going to ask for comments or something, the federal government. So she wanted to know if it would impact us at the State.

Q. So there was a proposed rule under Section 1557 of the ACA. And Marie Isaacson was trying to understand how that rule would impact the ADOA.

A. Correct.

Q. Is that right?

A. Correct.

Q. Okay. If we look at the next email, which kind of cuts off to the next page, it starts on the page with -- the first page of the exhibit with little Bates AZSTATE.006074.

See that?

A. Yes.

Q. So this one is from you to Amy Clatterbuck and Heather Gallegos at U -- UnitedHealthcare. You're following up on Marie's request. And at the end you say [as read]: Does UHC feel that UHC would not be able to exclude transgender reassignment no matter if the State plan excludes the benefit or not?

Do you see that?

A. I do.

Q. Why are you sending this email?

A. Because Marie said to, I'm sure. But I am trying -- I have a feeling UHC didn't return their information within the time frame. And then based on some information we got she was trying to figure out whether the plans could administer the plan no matter what the decision was on what was covered.

Q. So did Marie ask you to send the email?

A. Because it starts with Marie, I'm going to say yes, but I don't have any memory of this.

Q. Without regard to this email and -- specifically, do you remember being asked to look into this issue or having any role in this issue?

A. My role in this particular issue was Marie was gathering a lot of information from a lot of different sources so she kind of wanted a centralized person or, you know, a place -- one place to go to be able to get all this different information that would be in one place. So I -- my big -- my big assignment was a chart. I had this chart where I took all this different information from all these different sources and I put the chart together for her and we would -- she -- so she could have an easy to kind of understand document to look at in one place instead of having to jump around in a million different places to look at stuff.

Q. So Marie wanted someone to keep all of the

information that was being collected centralized.

A. Yes.

Q. Is that correct?

A. To kind of take it and put it into something that a normal person might be able to understand.

Q. And was that your role, to take the information that was being collected and to centralize it?

A. Yeah. I -- I made the chart and did a lot of cutting and pasting as I recall.

Q. So you were involved in coordinating and centralizing all the research that the ADOA was doing regarding this issue in particular?

A. Yeah. Correct.

Q. Did you do any analysis of this issue or were you just collecting information and analysis that other people were doing?

A. I was pretty much just collecting the information.

Q. And where was the information being collected from?

A. The vendors, the HHS website, as I recall. I remember Googling and finding things from different -- a lot of different agencies. Different -- I mean, we gathered information from different states, universities.

Q. Okay. So I have vendors, the HHS website, and

Q. Do you remember how or if at all Marie Isaacson reacted to this assessment of cost?

A. No.

Q. We discussed earlier that generally when cost is minimal or when a -- a new benefit has an inexpensive cost, that ADOA is more likely to cover the benefit. Is that right?

A. That I think it would be safe to say the odds go up.

Q. So the fact that Oregon and Washington are seeing that in their experience the cost associated with covering transgender benefits is minimal, should that have made the odds go up that ADOA would cover transgender benefits?

A. I think it would be something that would be important to know.

Q. So it would be a factor that would weigh in favor of covering transgender benefits?

A. Yes.

Q. Okay. If we turn to Exhibit 24. This has been premarked as Schafer Exhibit 24. We can enter it into the record as Schafer Exhibit 24. In the bottom right-hand corner you should see Bates AZSTATE.009183.

Do you see that?

A. Yes.

Q. And this is an email chain including you, Scott

A. Very much so.
Q. Okay. I want to look at the chart. The first page in particular which has a little -- well, big Bates number 004484. And the little Bates is the same.
Do you see that?
A. Yes.
Q. If you look at under costs, the first bullet says: ADO -- ADOA analysis estimated the overall impact to cost to be relatively low.
Do you see that?
A. Yes.
Q. Do you know who wrote that?
A. Probably me.
Q. So this is your bullet point summarizing the research that had been done on cost?
A. Yes.
Q. And your impression at the time based on that research was that the cost would be relatively low.
A. Yes.
Q. Is that right?
A. Correct.
Q. If you look at the third bullet point it mentions that employers have found it to be less expensive because the benefit is not as utilized as expected.
Do you see that?

black and white.

Q. And who would that someone might have been?

A. I have no idea.

Q. And to be clear, what they didn't want in black and white was that the cost to ADOA would be relatively low.

A. Yeah, the way it was -- it makes it sound like it's not a lot of money.

Q. Okay. We can turn to Tab 30. This has been premarked as Schafer Exhibit 30. And we can enter it into the record as Schafer Exhibit 30. In the bottom right-hand corner you should see AZSTATE.151707.

Do you see that?

A. I do.

Q. And this is another version of the chart that you were working on; correct?

A. Yes.

Q. I will represent to you that this document is a stand-alone document, meaning it's not attached to any email. Does that make sense?

A. Yes.

Q. I will also represent to you that unlike the other charts that we had previously looked at this one does not have a draft watermark. I don't know if you noticed but the other ones had a draft watermark

underneath.

A. Yes.

Q. This one does not.

Does it make sense that this would be a final version of the chart?

A. Yes.

Q. What is the significance of it being the final version of the chart?

A. No more people were going to be looking at it and making changes.

Q. So no more changes were made. But was it presented to anyone?

A. My assumption would be yes.

Q. Who do you assume it was likely presented to?

A. Either the director or the governor's office.

Q. But you don't know for sure whether this was presented to the director's office or the governor's office; is that right?

A. Correct.

Q. Is it possible that it was also presented to the Joint Legislative Budget Committee?

A. It's possible, but I think it seems unlikely.

Q. Why does it seem unlikely?

A. Because it's -- it's not the type of thing that usually went before them.

Q. Is it fair to say that the -- the Joint Legislative Budget Committee is generally not in the weeds about, for example, per member per month cost?

A. Right. I mean, normally when you go before them you've got your plans. You know, this is the changes we're going to make, dot, dot, dot, dot, dot. And you're just looking for their blessing.

Q. And is it fair to say that the J -- the Joint Legislative Budget Committee cares about the headline, the ultimate decision, and not necessarily the details?

A. (Indecipherable.)

THE COURT REPORTER: Did you say no?

THE WITNESS: I said yes.

Q. BY MR. GARBACZ: Okay. If we look at the first page, the first page is what appears to be a summary of all of the information that follows. Is that right? Does that seem right?

A. Well, it's really not a summary. Yeah, I guess, yes.

Q. If we look at the first page, and just based on the headings, it looks like there are really three topics of information gathering here. The first topic is vendor and A-H-C-C-C-S current coverage. Is that right?

A. Yes.

Q. And the second category of information is on

Section 1557 and whether or not it requires coverage; right?

A. Correct.

Q. And the third category of information is costs.

A. Yes.

Q. Is that correct?

A. Yes.

Q. If we look down at the last bullet point on costs it says [as read]: Vendor/ADOA research. UnitedHealthcare estimates an approximate .5 increase in cost or approximately 3.6 million annually. ADOA research indicates a range of 17 cents to 77 cents per employee per month increase or approximately an annual increase of 130,552 to 582,720 annual increase in cost.

Do you see that?

A. Yes.

Q. So 17 cents to 77 cents per employee per month, is it fair to say that that cost is low?

A. Yes.

Q. Did you have any involvement in interfacing with UnitedHealthcare about their projection?

A. About how they got the number?

Q. Yes, about the number that they have here, .5 increase in cost.

A. I don't remember -- I don't remember anything

coverage for such services, we nonetheless must remove exclusionary language. We are concerned that this may be misleading to consumers and how State DOIs may interpret no specific exclusionary language when a claim is denied.

It goes on to say N -- [as read]: The NPRM would require insurers to cover services for gender dysmorphia as we would for other medical conditions. For instance, hysterectomy, mastectomy, et cetera.

Do you see that?

A. Yes.

Q. So based on what Cigna was telling you -- or was telling ADOA, under 1557 ADOA would have to cover hysterectomies for gender reassignment just like it covered hysterectomies for other medically necessary reasons; is that right?

A. Yes.

Q. But as we discussed earlier, ADOA does not cover a hysterectomy when the purpose is for gender reassignment surgery; is that right?

A. Yes.

Q. Okay. If we turn now to Page 10, which is in the bottom right-hand corner AZSTATE.151716, little Bates, up at the top there is a title here which is "ADOA Analysis."

Do you see that?

A. Yes.

Q. Does this look familiar to you?
A. Yes.
Q. Have you reviewed it before?
A. I'm sure I have, yes.
Q. Is this one of the documents you remember from preparing for this deposition?
A. Yes.
Q. Prior to that do you remember seeing this?
Let me be more clear. Do you know where this -- this information in the chart came from?
A. It came from that information that Kelly provided.
Q. Okay. So in the email that we had previously discussed where Marie Isaacson forwarded you Kelly Sharritts' research, this is Kelly Sharritts' research -- Kelly Sharritts' analysis, I should say.
A. Correct.
Q. And if we look at the first column, which is "Max Utilization and Cost," is it fair to say that this column projects what cost would be under sort of a worst-case highest utilization and highest cost scenario?
A. Yes.
Q. And if we look at the bottom under the max utilization and cost approach, it says that the per employee per month cost is 71 cents.

that are more expensive than that.

Q. BY MR. GARBACZ: Do you know if ADOA has added things that are more expensive than that or that added benefits that are more expensive than that in your tenure at the ADOA?

A. No. I'm sure they added stuff but I wouldn't know the cost of each addition.

Q. Can you think of an example of something that might have cost more than that that ADOA added in your time at ADOA?

A. I know we add -- like we added the drugs to take care of hepatitis C, which is an extremely expensive drug, because it cured people. So I know we added things like that.

Q. Let's take that example for a minute. Do you remember what the name of that drug was?

A. No.

Q. But it's a hepatitis -- hepatitis C drug?

A. Right. And it -- it actually cures the person of the disease so we -- then we stop getting claims from that person. So it's worth the large expense.

Q. So if a procedure cures someone of a disorder, that's a reason to cover it. Yes?

A. Yes.

Q. Do you remember generally what the cost was for

the plan can just, you know, like exclude bariatric surgery. You would -- may find many people that would find that medically necessary but the plan excludes it. They don't have to cover it.

Q. You mentioned that a doctor might prescribe something to be medically necessary but that might not actually mean that it's medically necessary. Is that correct?

A. Correct.

Q. Did ADOA view transgender benefits as one of those things that a doctor might prescribe as medically necessary but weren't actually medically necessary?

A. I remember no discussions about whether it's really medically necessary or not.

Q. So sitting here today you have no recollection of whether anyone at the ADOA ever expressed an opinion regarding whether transgender benefits are medically necessary or not?

A. Correct.

Q. Okay. You mentioned that generally as a self-funded plan ADOA covers things not because it's required by law to cover them but because it elects to cover them. Right?

A. Okay.

Q. Is that correct?

A. Yes. I -- The wording is a little weird, but yes.

Q. So most benefits that are in the plan are benefits that ADOA has decided to cover, not ones that it has determined it is legally required to cover.

A. Correct.

Q. And you mentioned some reasons why ADOA elects to cover benefits. One of those reasons I -- you mentioned was that it might be nice to have. Is that right?

A. I believe I threw that out, yes.

Q. Was gender reassignment surgery considered a nice to have by the ADOA?

MR. CURTIS: Objection; form of the question.

THE WITNESS: I couldn't answer that question.

Q. BY MR. GARBACZ: Do you consider gender reassignment surgery a nice to have?

A. No.

Q. Why not?

A. Nice to have is -- I'm more -- it's -- To me it's a more carefree kind of thing, just things that are not quite as serious as that.

Q. So you don't view gender -- you don't view gender reassignment surgery as serious as other procedures?

Exhibit 5

IN THE UNITED STATES DISTRICT COURT

DISTRICT OF ARIZONA

RUSSELL B. TOOMEY, Plaintiff, vs. STATE OF ARIZONA; ARIZONA BOARD OF REGENTS, D/B/A UNIVERSITY OF ARIZONA, a governmental body of the State of Arizona; et al., Defendants.	)	4:19-cv-00035

VIDEOTAPED DEPOSITION OF PAUL JAMES SHANNON
(EXCLUDING CONFIDENTIAL FOR ATTORNEYS' EYES ONLY PORTION)

Via Zoom videoconference
June 25, 2021
8:30 a.m.

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Prepared by:

Jill Marnell, RPR
Arizona Certified
Reporter No. 50021

problems, but yes.

Q. And lots of huddles also --

A. Right.

Q. -- sounds like.

Do you typically interact with insurers in your role?

A. So you are using a term and I don't know how you're using it. We refer to them as carriers. We are a self-insured program. So what we purchase from a carrier, which is what you probably would call an insurer, and -- and I'll use UnitedHealthcare as an example.

We have a contract with UnitedHealthcare that pays on a per member, per month administrative basis. Access to UnitedHealthcare's network of providers and access to their claims processing systems, which is -- You know, those are -- those are extremely complicated and robust systems, okay? We -- The actual claims that are incurred by our members are paid out of what's called the special Employee Health Insurance Trust Fund. And it's a -- it's a State fund that accumulates all the premiums that -- that, you know, State employees, the State agencies, the retirees, and COBRA people pay into the -- into this fund, and then from that fund we pay the claims as they are submitted to us by the carrier, okay?

So we are not actually insured by anyone.

And we do not maintain any -- any other kind of stop-loss insurance. We are fully self-insured and all the claims are our responsibility to pay. But we use the systems that are provided by the carrier to do that.

Q. I see.

So you mentioned UHC being one of the carriers. Is Aetna another carrier?

A. Aetna and Cigna were carriers up until January 1st of this year. They did -- we did a procurement, a very lengthy procurement to do a new medical carrier contract, and Aetna and Cigna were not successful. Blue Cross and UnitedHealthcare were, were successful.

Q. So the current carriers are UnitedHealthcare and Blue Cross Blue Shield of Arizona?

A. That's correct.

Q. Any others?

A. We have other carriers for dental insurance. We have a fully insured dental product. We have a life insurance. We have vision insurance. And those are also fully insured. We have short-term disability insurance; we have long-term disability insurance which are also fully insured.

Q. But for medical benefits, UHC and Blue Cross?

A. That's correct.

Q. What about -- how does Mercer fit in, if at all?

A. Mercer is a -- an insurance consultancy. So they provide experts upon request to -- to assist in the management of, you know, whatever kind of insurance topic, you know, we need assistance with.

Q. Prior to January 1st of this year when UHC and Blue Cross became the only carriers for medical benefits, who were the prior carriers and how long had they been carriers with the ADOA?

A. The previous set of contracts were -- ended after six years. So that was -- those were the contracts that ended on December 31st of 2020. And for medical carriers it was United, Blue Cross, Aetna, and Cigna.

Q. And you mentioned that when the six-year contracts were up on the last day of last year Aetna and Cigna didn't -- weren't successful in their bids. And why was that?

A. Well, the procurement committee made a decision not to award those contracts based on the -- on the -- the way they awarded points in the procurement.

Q. In your understanding did it have any -- Rephrase.

In your understanding did the decision not to continue to use Aetna and Cigna as carriers have anything to do with the decision of whether to cover

items and correspond with her.

She's -- she's very interested in -- in telework of employees, and my -- my data scientist was able to capture that data out of the human resources information system to describe, on a payroll-by-payroll basis, how many -- how many employees were teleworking versus how many were -- were working at the physical location.

So that's one example. But it's not very common that I meet with -- with her or -- or really anyone else in the governor's office.

Q. So would you say it's uncommon -- you just said -- for you to take a meeting with Christina Corieri or others in the governor's office on benefit decisions? Is that right?

A. Well, uncommon -- uncommon is one way of saying it. Another way of saying it, it doesn't happen very often, but it's not -- it's not particularly surprising when it does happen. And -- and there are always, you know, reasons why that would happen.

Q. And what are the types of reasons? Why some (indecipherable due to Zoom connection)?

THE COURT REPORTER: Why what, I'm sorry?

MS. SHEETS: Something would rise to that level.

an exclusion for gender reassignment surgery?

A. So this -- this document that we're looking at here was not in consideration of whether or not to offer it. It was to understand what the benefit cost. And it was not part of the decision-making other than to be -- other than to do my due diligence should we provide that benefit. For whatever reason, okay? We asked all of the carriers for that information and we asked Michael for that information. And, you know, some of that -- This is definitely falling into the art area, right, where we didn't have previous experience, so -- and -- You know, and I don't think that this benefit was widely offered prior to the Affordable Care Act.

THE COURT REPORTER: I'm sorry, did you say you don't think that this benefit was widely offered?

THE WITNESS: Yes. I -- I don't think that this benefit was widely offered prior to the Affordable Care Act.

Q. BY MS. SHEETS: So you asked Michael Meisner to do a cost analysis, but you also reached out to carriers who had done cost analyses of their own based on their data; is that right?

A. That's correct.

Q. Was there any reason to discount the analyses done by carriers who were already covering this benefit?

A. That's correct.

Q. Would you -- or who would have been most likely to have asked that a chart like this be made in their -- their role at the time in 2016?

MR. CURTIS: Objection; form.

THE WITNESS: I don't know. Marie was in -- Marie was the benefits director so she would instruct people on their work.

Q. BY MS. SHEETS: And during your time as the budget director up through August of 2016 were you ever asked to conduct a cost analysis on the impact of covering gender reassignment surgery?

A. I do not recall ever being asked that, no.

Q. What about coverage for any transgender benefits, including hormone therapy?

A. No, I don't recall that.

Q. If you look at the last bullet on this first page of AZSTATE.118313 it says that [as read]: ADOA research indicates a range of 17 cents to 77 cents per employee per month increase for coverage of gender reassignment surgery.

Is that a cost that in your experience would prohibit the ADOA from considering covering a benefit?

A. As I mentioned previously, the absolute dollar amount is not the only factor in determining whether or

nobody else has to pay $58,000 if they want residential treatment for their daughter. That's just one way that people want coverage.

You can understand how my job is so difficult, because there are so many competing demands.

Q. BY MS. SHEETS: I do appreciate that context and, as you said, being the monkey in the middle on a lot of these issues that everyone wants covered.

But just to bring it back to the specific point of gender reassignment surgery, would you agree with the statement that the cost of covering gender reassignment surgery, in your view, is the reason that ADOA is not covering gender reassignment surgery?

A. I do not know the reason why ADOA is not covering gender reassignment surgery. It was that way when I got there.

Q. Has anyone explained to you since you came back to the ADOA in 2018 why the ADOA continues to maintain an exclusion for gender reassignment surgery?

A. No.

Q. Have you asked?

A. I don't think I have.

Q. If you were going to ask, who would you ask to find out the answer to that question?

A. I suppose I would ask the director or one of my

bosses, the deputy or Emily.

Q. So Andy Tobin or Emily?

A. Rajakovich.

Q. Thank you. So you --

A. Or Elizabeth Thorson, yeah. Those three.

Q. And you have reason to believe that they would know the reasoning behind the ADOA's decision to --

A. No, you asked me who I would ask. I would ask them. I'm not sure that they would know.

Q. Well, someone must know; right?

A. I -- All I know is I don't know.

Q. Is there any strong reason in your estimation that you can think of why the ADOA would continue to maintain the exclusion for gender reassignment surgery?

A. When I say I don't know it means that I don't know. Just why [sic] I don't know why we don't cover residential treatment.

Q. But in the context for coverage for gender reassignment surgery has there been any reason that you've heard of since becoming benefits director in 2018 for maintaining the exclusion for gender reassignment surgery?

A. I have not heard a good reason why we exclude it.

Q. If you turn to the second page of this document -- And you might have to turn the binder because it's landscape. But on the left-hand side there's a

understanding what the potential coverage would cost.

Q. Let's turn to Tab 32. So this has been marked Shannon Exhibit 32, Bates number AZSTATE.151099.

Do you see that?

A. Yes, I do.

MS. SHEETS: Let's mark this as Exhibit 32.

Q. BY MS. SHEETS: Do you recognize this?

A. Yes.

Q. Is this the analysis by Michael Meisner that we were just talking about?

A. Yes, it is.

Q. And there is a date here, 9/23/2019.

A. Yes.

Q. Does that seem like the right date that Michael Meisner would have completed this analysis?

A. I trust that it is. It -- Usually our documents are dated correctly.

Q. And it's titled estimated annual costs to included transgender benefits. Did you ask Michael Meisner to perform this analysis?

A. I think I did.

Q. Was it in response to this lawsuit?

A. Yes, it was -- it was in line with all of our investigations.

Q. When you say -- I mean -- Excuse me. What do you

Exhibit 6

IN THE UNITED STATES DISTRICT COURT

DISTRICT OF ARIZONA

RUSSELL B. TOOMEY, Plaintiff, vs. STATE OF ARIZONA; ARIZONA BOARD OF REGENTS, D/B/A UNIVERSITY OF ARIZONA, a governmental body of the State of Arizona; et al., Defendants.	)	4:19-cv-00035

VIDEOTAPED DEPOSITION OF MICHAEL MEISNER

Via Zoom videoconference
March 16, 2021
8:38 a.m.

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Arizona Certified
Reporter No. 50021

to the contribution strategy document; is that right?

A. That's correct. Our benefits -- our benefits -- If there's a change in benefits, if there's a change in vendors, all that gets communicated through that document.

Q. Okay.

A. Now, there could be a process -- there could be a process that I'm unaware of and there could be communications, but I'm unaware of, outside of that process that I just described. But I -- I -- I don't have any personal knowledge of those -- those communications.

MS. SHEETS: Okay. I think it's time for a break.

MR. GARBACZ: Time for a lunch break.

MS. SHEETS: Yeah. And if it's -- Could we go off the record, please.

THE VIDEOGRAPHER: Off the record at 11:58 a.m.

(Recess.)

THE VIDEOGRAPHER: Back on the record at 12:41 p.m.

Please proceed when you're ready.

Q. BY MS. SHEETS: Mr. Meisner, there were a series of digital copies of files that were sent over to your counsel. Do -- do you have those files in front of you?

A. Yes, I do.

is that right?

A. That's correct, yes.

Q. Had you seen any version of this document?

A. I have not.

Q. Do you know what this document is?

A. It appears to be -- I mean, it appears to be -- to be a side-by-side comparison of what -- maybe some analysis done on the cost of transgender surgery. But there could -- it also looks like there's -- it's relating to some external documents as well that were initially embedded in this document that is not coming through here. So those -- those documents that were embedded might be in the list of -- of -- of the other documents that we have. But that's what I'm looking at.

Q. Have you ever seen a chart like this one comparing how insurers have approached coverage before?

A. Yes. So this is fairly typical of what we would do, plan administration would do, is if -- if -- if there was going to be some copy change or text change within the plan guide, the plan document, we would reach out to our medical vendors, and in this case it looks like they reached out to the four medical vendors plus Mercer for a copy, for some text.

Q. And when you say copy what do you mean by that?

A. Letters, words, sentence, descriptions, and, you

know, so -- so this -- this is what -- this is what it looks like to me what's here.

Q. And so when you -- it's fairly typical -- So let me rephrase.

When you reach out to these insurers for copy, words, sentences, what are you looking for specifically? Like what do those words and sentences mean to the ADOA?

A. So, you know, to -- to use -- I guess so I'm -- I'm not sure if I -- if I -- I can't really speak to what plan administration uses this document for, but this is really plan administration's tool to -- to look at various text, if you will, and -- and maybe through this is some discovery of what the text should look like in our plan document. This is --

Q. Okay.

A. But, you know, this is -- this is my understanding of what they use this document for.

Q. Do you typically contribute?

A. No. This -- So this is purely from the four insurers and Mercer. So I -- I wouldn't -- this would be -- Going back to our analogy of reaching out externally, this is a very good example of what I was talking about. So they reached out externally to the four medical and Mercer.

this analysis at all?

A. Not that I recall, no. Not at all.

Q. Now, I want to talk about the analysis that you have performed on gender reassignment surgery. You -- you established that you were not involved in this analysis on Pages 10 and 11. Were you involved in any gender reassignment surgery analysis --

A. Yes.

Q. -- in 2015?

A. Not in 2015, no.

Q. What about in 2016?

A. No.

Q. 2017?

A. No.

Q. I'm -- I -- I've asked you this kind of area again, but we're going to move toward what you -- we're going to move toward the analysis that you did do on gender reassignment surgery for ADOA. How many analysis -- Excuse me. How many cost analyses have you performed for ADOA on the coverage of gender reassignment surgery?

A. I believe only two.

Q. And what were those?

A. Those were in 2019.

Q. Okay. And why two separate analyses in 2019?

A. Oh, I continued my research and refined my analysis.

Q. Do you remember when the regulation concerning the ACA came down that would have required coverage of gender reassignment surgery?

A. Well, I recall that there was quite a few years that the final rules were to come out about that issue.

Q. And do you remember when those rules were finalized?

A. I believe they were finalized in -- I don't -- No, I don't. Maybe 2018. I don't.

Q. When you performed your analysis in 2019, the first analysis --

A. Uh-huh.

Q. -- what was the reason for doing the analysis on gender reassignment surgery in the first place?

A. It was at the request of our attorneys.

Q. Do you know why they would have requested you to perform the analysis in 2019?

A. We were being sued.

Q. What was the nature of the lawsuit?

A. It was Toomey versus the State of Arizona.

Q. So am I hearing correctly the first time that you dug in and did an analysis on whether the ADOA should cover gender reassignment surgery was in 2019 in response

Q. Just going back briefly to the -- the articles that you have cited here, did you do an analysis of which article to rely on when you were citing them as the -- the sole article for the estimation for --

A. I believe -- The second article I believe is from John Hopkins. And that was based on a federal -- a study of federal employees. And it looked to be extremely credible to me and very -- It just looked very credible, the study itself. And the study had been published.

Q. Did you look at other studies or articles and determine that this was the best one or --

A. No. This looked -- you know, this looked to be a very good, credible study to me.

Q. So did you -- How did you find this article?

A. Yahoo.com.

Q. So you got on yahoo.com and you typed in -- Well, what did you type in, if you remember?

A. I don't. Maybe transgender cost estimates or transgender benefits. But it -- it turns out that there's very little -- very little credible -- in my opinion, credible information out there. And -- and this looked to be a study that was at least published and -- and made -- made publicly to all.

The other ones, such as like the San Francisco study, was never published. It did -- The

A. Yeah. I would have never done this analysis.

Q. So if there was no lawsuit against ADOA you would have never done this --

A. Yeah.

Q. -- estimated cost analysis on the coverage for gender reassignment surgery; right?

A. Unless there was a -- you know, here again, if -- if there was -- you know, maybe there was a question from the governor's office, or -- or maybe the universities would ask us to do this analysis. I would have done that. I would have done exactly what I did here. But -- but this is -- this was from the attorney from -- from last year -- or from 2019. This is why I did this.

Q. Which attorney was that?

MR. CURTIS: I'm -- I'm going to state that's attorney/client privileged communication (indecipherable).

THE COURT REPORTER: Privileged communication what?

MR. CURTIS: That that's a privileged attorney/client -- attorney/client privileged communication that we're not going to get into.

THE WITNESS: I don't remember -- I don't remember the individual's name.

MR. CURTIS: You don't need to answer.

Exhibit 7

IN THE UNITED STATES DISTRICT COURT

DISTRICT OF ARIZONA

RUSSELL B. TOOMEY, Plaintiff, vs. STATE OF ARIZONA; ARIZONA BOARD OF REGENTS, D/B/A UNIVERSITY OF ARIZONA, a governmental body of the State of Arizona; et al., Defendants.	)	4:19-cv-00035

VIDEOTAPED DEPOSITION OF MARIE FRANCES ISAACSON

Via Zoom videoconference
March 26, 2021
8:21 a.m.

Glennie Reporting Services, LLC
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Prepared by:

Jill Marnell, RPR
Arizona Certified
Reporter No. 50021

Q. And am I correct in assuming that if it wasn't required the Arizona Department of Administration and others making the decision weren't going to implement those other services?

A. I don't know that to be true. I don't know.

Q. Did you determine that it was required to add the services that were added in 2015?

A. We sought legal counsel and that -- with the legal counsel's recommendation and meeting with the governor's office there was a decision made -- a conclusion made to cover some services.

Q. What services were covered and what services were not covered?

A. The counseling and hormone therapy were covered. And surgery was not covered.

Q. Was there an explanation given as to why surgery was not covered?

A. The -- the discussion -- the discussion was that the requirement was that some services are going -- are required to be covered, and the services that we are going to cover are hormone therapy and counseling.

Q. Was it determined by anyone that surgery was not required to be covered?

A. Yes.

Q. And who determined that? Your counsel?

A. Helena -- I can't remember her last name. Maybe Rodrigues.

Q. Just one person?

A. There was somebody that worked with her, Staci. I can't remember Staci's last name. And there was a -- there was an additional person that I -- that I remember from reviewing the email strings with Ryan Curtis.

Q. You knew from your discussions with the folks at the University of Arizona that the university was interested in having ADOA's plan provide better healthcare coverage for transgender people; correct?

A. Yes.

Q. And they were pushing for basic benefits before they were implemented; correct?

A. Yes.

Q. And they also were pushing for benefits to cover transgender gender dysphoria surgery; correct?

A. I think so.

Q. Well, didn't you have a number of meetings with people at the University of Arizona where they pointed out that professors and other staff at the University of Arizona were interested in having that coverage?

A. I wouldn't say -- Well, phone conversations. There were a number of phone conversations.

Q. Oh, okay. And let's include phone conversations

with face-to-face conversations. There were a number of those; correct?

A. Yes.

Q. And they made clear that they wanted coverage for surgery for gender dysphoria; correct?

A. Yes.

Q. And ultimately, at least while you were at ADOA, that was not provided; correct?

A. Yes.

Q. Did the University of Arizona folks you talked with tell you why they wanted to have the coverage for surgery for gender dysphoria for their professors and staff?

A. Helena said that there was a meeting with the U of A president and that there was concern because there -- transgender studies was offered at the University of Arizona and there were concerns that our health plan didn't cover transgender reassignment surgery, didn't cover it -- didn't cover that at all, and that -- In particular I remember that there were professors with children and they were paying for treatment out of pocket and it was very expensive.

Q. So they made it clear that it was an important issue.

A. Yes.

Q. And what did you say in response to those conversations?

A. Currently not covered by our plan.

Q. Did you tell them ADOA was exploring the possibility of covering surgery for gender dysphoria?

A. I said we were researching it.

Q. And did you research it?

A. Yes.

Q. And I think the research took place around this time, starting in September of 2015 and went through -- at least through November of 2015. We can look at the documents, and will, as time allows.

What did the research tell you about coverage for gender dysphoria surgery?

A. I think the majority of our plans said that it was not covered and, you know, confirmation that some states did cover it.

Q. So were you looking to see whether other states covered it to determine whether the ADOA should cover it?

A. I was researching what -- what existed as far as in the benefits world, reached out to Mercer, reached out to all of our health plans, trying to gather as much information as possible about it to help inform a decision.

Q. Well, one of the things that the ADOA health plan

under a dollar per plan.

A. I --

MR. CURTIS: Objection.

MR. ECKSTEIN: Per employee. Per employee per plan.

THE WITNESS: I -- I -- I don't remember, Paul.

Q. BY MR. ECKSTEIN: Okay. Well, we'll -- we'll take a look.

Thinking back, did you believe that the -- the cost that was estimated was -- was too high to justify providing that benefit?

A. I don't remember that being -- We discussed cost, but I don't remember that being the driving factor in the discussion.

Q. What was the deciding factor?

A. What was required by law. What was required by law for us to cover.

Q. So as you recall it, if the -- Strike that.

As you recall it, the persons making the decisions were focused on what was legally required. And if it wasn't legally required, surgery for gender dysphoria was not going to be offered in the plan.

A. What I recall is that there was a decision that had to be made, and reaching out to the health plans,

an email from Scott Bender to Erica Emmons. And it says that -- and I'm summarizing -- that you had a meeting with the governor's office on transgender issues tomorrow, meaning September 2, 2016, and Scott was asking for additional information, I guess from Cigna, that would help you with the meeting.

Is that a fair summary of that?

A. Yes.

Q. You're not listed as getting a copy on that. Do you recall getting a copy?

A. No.

Q. Is this one of the exhibits you looked at? When was it, last Sunday you were looking at exhibits, or more recently?

A. I know that we looked at exhibits with Erica's name on it. I don't know if this was one of them or not.

Q. Okay. Did you tell Scott that you had this meeting coming up?

A. Based on the email I'm assuming I did.

Q. Do you recall the meeting?

A. I know that I met with the governor's office. I can't tell you that I recall this specific meeting, no.

Q. Do you recall more than one meeting with the governor's office?

A. There's one meeting that sticks out in my mind.

Q. And do you recall when that meeting took place?
A. I don't. I'm assuming it was around 2016, around this time frame, but I don't really recall.
Q. And why does that stand out?
A. The meeting with the governor's office?
Q. Yes. You said there was one meeting that stood out and I was asking why that particular meeting, whenever it took place, perhaps around September of '16, why does that stick out in your mind?
A. Because that is when the resolution of what we would cover, in my mind, was made.
Q. Who was in that meeting?
A. I think Christina Corieri, Mike Liburdi, Ryan Curtis, myself, I think John Fry from the Attorney General's Office. That's who I recall. Maybe Nicole Ong.
Q. Does Nicole have a last name?
A. Ong, O-N-G.
Q. Okay. And what was her position?
A. She was a general counsel at Arizona Department of Administration.
Q. Were you the only two employees from ADOA who were there?
A. I can't remember if the director was there or not, Craig Brown.
Q. Do you recall what you said at that meeting?

A. No.

Q. Were you asked to give a report on what other states provided coverage for gender dysphoria surgery?

A. If it's the meeting that I'm recalling, I just remember talking about advice from legal counsel and -- and, you know, what we need to do moving forward, what we're going to do moving forward.

Q. And you had met with legal counsel who told you what was legally required; correct?

A. I don't know if we met or we just communicated via email or phone. Or both.

Q. And you repeated that to the governor's office even though counsel were there?

A. No. I think in advance of the meeting -- again, if it's the same meeting -- I shared the legal advice. It was written. I shared that with Christina Corieri, maybe Mike Liburdi, John Fry, Nicole.

Q. And Mike Liburdi was the counsel for the governor at the time; correct?

A. That's right.

Q. Do you recall how long that meeting lasted?

A. No.

Q. But your recollection is at the end of that meeting you understood that surgery for gender -- gender dysphoria was not going to be covered.

A. Correct.

Q. And was it based on the fact that it was not legally required?

A. I remember that the discussion was services have to be covered, not specifically surgery, so you could cover counseling and hormone replacement therapy -- or not replacement, hormone therapy, and that that is what we would cover.

Q. Was hormone therapy covered by -- required by the law?

A. I don't remember.

Q. Do you remember discussion about that?

A. Like I said, I just remember that the law requires that services are covered. No specific services are outlined. That's what I recall the discussion being.

Q. I don't understand that answer. Maybe you can help me a little bit. When you say no specific services were -- Did you say out -- outlined or outlawed?

A. What I'm saying is that what I recall is the discussion of what the law requires is that you cover some services, plural, related to transgender gender dysphoria, but nothing -- no specific service is outlined. That's what I recall the discussion --

Q. Okay.

A. -- being.

Q. Did the plan during the time you had involvement with it cover any services, health services, that were not required by law?

A. I don't know. I mean, I'm sure there are services that aren't required by law that were part of the plan description. The plan was adopted from when we were fully insured. So, you know, I'm assuming there are things that are covered that aren't required.

Q. Do you recall what they might be?

A. I think some plans offered healthy back. You know, that's the one that comes to my mind.

Q. But that was not required by law?

A. Not to my knowledge.

Q. So there was no general policy at ADOA to cover health benefits only if they were required by law; isn't that correct?

A. I would say that's correct.

Q. Other than coverage for healthy backs, can you recall any other services that were not required by law that were offered in the plan?

A. Not off the top of my head, no.

Q. You say that this one meeting took place and may or may not have been around this time in September. We'll look at other documents to see if we can pin it down. Do you recall how many times you did meet with the governor's

A. I -- I don't remember the -- the context of the email.

Q. Well, let me ask it a different way.

When you went into the meeting with the governor's office you were of the view, were you not, that the exclusion for transgender surgery should be maintained?

A. When I went into the governor's office meeting that we've talked about previously with Christina Corieri and Mike Liburdi and John Fry and Nicole, that, to me, was when the decision was made. I didn't go into the meeting with the decision.

Q. No, I know that. But did you go in with a view that it should be excluded?

A. It wasn't my decision to make.

Q. I understand that. But you were the person in charge of the plan. Surely they asked for your view on this and your opinion, did they not?

A. They asked me to -- Or I don't even know that I can say they asked me. I researched it and gave them all the information based on the research that I conducted.

Q. And never once --

A. It wasn't about my opinion.

Q. And never once did they say, Marie, even though it not required, what's your opinion on this?

material that is struck out?

A. Yes.

Q. And that's the same as appears on Page 5568. The language you came up with.

A. Yes.

Q. Why was that modification of the language necessary?

A. Because we were not excluding hormone therapy and counseling.

Q. So do you take from this that until January 1, 2017, hormone therapy was excluded, and by changing this language you meant to cover hormone therapy but not gender reassignment surgery?

A. Yes.

Q. Was one of the topics at the meeting in the governor's office whether hormone therapy should be covered or was the discussion solely focused on covering the gender reassignment surgery?

A. The discussion, again, was around the interpretation of what services were -- were -- which services were required to be covered. And the conclusion was that not -- not everything had to be covered. That you had to provide some services, but it wasn't specified as to which services were required.

Q. Take this a little out of order, but could you

gender reassignment surgery?

A. I don't know that we ever landed on an exact number.

Q. Okay. But as I understand your testimony this was not a cost issue. This was an issue of whether it was legally required; correct?

A. Correct.

Q. Okay. Did you ever have an actuary determine the cost?

A. Michael Meisner was an actuary. He worked for Kelly. I'm not sure if he got involved in that or not.

Q. Okay. Let's take a look at Tab 17. This will be Exhibit 109. You were copied on the email indirect -- in the second email indirectly. You see that there was an email that Scott Bender sent you on August 22nd, 2016, which attaches an email from Stephanie Martin of UnitedHealth; correct?

A. Yes.

Q. And so this was what UnitedHealth costs were?

A. Do you want me to read the email?

Q. Sure.

Just so you know, my question --

THE COURT REPORTER: Who is speaking, please?

MR. ECKSTEIN: Paul Eckstein.

Q. And what about -- what is it about bariatric surgery that sticks out in your mind?

A. Just what type of procedure -- there are different types -- there are different ways of conducting it, and we wanted to cover the gastric sleeve. We wanted to add that as a benefit.

Q. And when was that work?

A. 2013 maybe.

Q. And was it -- was that work almost all in 2013 or did it go on for a number of years?

A. It -- it was for the plan design for the following year.

Q. So in 2013 you recall working on what coverage the plan provided for bariatric surgery?

A. That's right.

Q. Do you recall ever working on any other -- And to clarify, did the plan exclude coverage for bariatric surgery at that point?

A. I didn't exclude it, but I think it covered specific types of bariatric surgery. It may have excluded it. I honestly don't remember. As I recall, it was to include that type of bariatric surgery.

Q. How did that process begin?

A. Two of the managers in the benefits division came to me with the recommendation to include gastric sleeve.

Q. And is gastric sleeve the type of bariatric surgery the plan was considering covering?

A. Adding, yes.

Q. Is that typically how extensions of benefits come to your -- came to your attention?

A. Yes.

Q. So someone working in the benefit services division would come to you and say the plan should cover a particular type of service or treatment?

A. Yes.

Q. Did you ever -- did you ever get such requests top down, say, from a supervisor?

A. No.

Q. And do you know where those two -- So speaking specifically -- speaking with respect to the bariatric surgery -- and I think it was a type of sleeve, gastric sleeve -- do you know where those two managers got the idea that the plan might -- should cover or should consider extending coverage for gastric sleeves?

A. I'm guessing from the health plans.

Q. And what do you mean by the health plans?

A. Aetna, Cigna, United, Blue Cross Blue Shield.

Q. And why would that be your guess?

A. Just knowing the functioning of benefits and how it works.

Q. Is it typical for the health plans to come to the ADOA recommending that coverage be extended for treatment?

A. I -- I would say it's typical that the health plans come to DOA with various recommendations: what to cover, what not to cover, changes to make.

Q. How often would you say, in your time working at ADOA, this happened?

A. That they recommended changes?

Q. Yes.

A. We met -- we met regularly. We met -- I -- I can't remember how often. Quarterly at least with the health plans. I can't say that each of those meetings resulted in recommendations of change. It was more how the -- how the plan was doing, a review of -- of the plan and utilization.

Q. So continuing to focus on this gastric sleeve for bariatric surgery, do you recall the outcome of that inquiry?

A. It was added as a benefit.

Or I should say, to be clear, extended a benefit. So for the type of surgery.

Q. Does that make a difference, whether a benefit is being added or extended?

A. I just wanted to be clear. It wasn't new, it was just an extension of the type of surgery we would cover.

Q. Thank you for clarifying that, Ms. Isaacson. But my question remains, does it make a difference whether the ADOA is considering whether to add a benefit or extend benefits?

A. I'm not sure I'm following your question.

Q. Sure. Is -- is there a standard process for when the insurers bring a recommendation on whether the plan should cover a benefit?

A. The process is that they bring the -- the recommendation and then we discuss it amongst ourselves -- we discussed it amongst ourselves, and then we would raise it to the director's office.

Q. And how long would that process typically take?

A. I'd say plan design started in June and was ready in -- I'm sorry, let me backtrack.

I would say it starts -- in the beginning of the plan year is when you start looking at your plan and what happens. And it results in a plan design change by June. So six months.

Q. Do you recall if it took -- Do you recall with respect to this gastric sleeve or bariatric surgery whether it took the six months?

A. I don't recall specifically, but that's about the time frame. I'm not sure how long the plans brought that idea forward.

generally I would say, yes, he would be involved.

Q. Why was it important to have Mr. Meisner involved? Sorry. Let me -- let me actually clarify that.

Was it important to have Mr. Meisner involved --

A. Yes.

Q. -- in the analysis of whether the plan should cover a particular treatment?

A. Yes.

Q. Why is that?

A. To estimate the impact to the plan regarding costs.

Q. And for those -- for those same reasons would it be important to have an external consultant, actuarial consultant?

A. I don't know that we always had an outside actuarial consultant look at -- I don't -- I can't say they were always involved in every decision, every analysis.

Q. How was it decided when you would involve an outside actuarial consultant?

A. We didn't have any specific -- I think it was reviewing the decision at the time and what we thought was needed.

Q. When you say "we," are you referring to yourself?

her through the -- when you were at the ADOA?

A. I -- Yeah, I -- Yes.

Q. Has there ever been a conflict of interest in your work with the Arizona governor's office because of your prior work at the ADOA?

A. No.

Q. So just to be clear, there's never been a matter that you didn't feel like you could approach the governor's office because of your prior work with the ADOA?

A. Correct.

Q. And are you aware whether the Isaacson Law Firm ever screened you off from anything because of your work at the ADOA?

A. No.

Q. So -- And, again, we're going to pivot to your -- to your work as the benefits director, you know, in the last role -- your last role in the ADOA. But just before that, on the bariatric surgery and gastric sleeve procedure we've been discussing, I believe you said earlier that procedure was ultimately approved.

A. Correct.

Q. Was that procedure legally required?

A. No.

Q. Why was it approved?

A. It could go as long as February.
Q. And would you have had -- would you, as the benefits director, have had final sign off on the language of this document?
A. Yes.
Q. Would you turn for me to Page 67 of this document. The Bates number in the bottom right-hand corner reading AZSTATE.010973. And actually, would you turn the page -- turn it back one page to Page 65. And so this is "Article 9, Exclusions and General Limitations"; is that right, Ms. Isaacson?
A. Yes.
Q. And does this document accurately reflect the exclusions to the plan for the year 2016?
A. Yes.
Q. So I am looking at Paragraph 16 under this Section 9.1, "Exclusions and General Limitations." And that's on Page 67, which I had you turn to first. And this Paragraph 16 reads [as read]: Transsexual surgery including medical or psychological counseling, hormonal therapy in preparation for, or subsequent to any such surgery.
Did I read that accurately, Ms. Isaacson?
A. Yes.
Q. So when we were talking about the plan's

exclusion of transgender benefits in 2016, is this what you have -- is this what you have in mind when we talk about that topic?

A. Yes.

Q. And is this the language you believe was in place when the plan went self-funded?

A. I believe so.

Q. You don't recall any other version of this exclusion prior to 2016, do you?

A. No.

Q. Do you know the original rationale for this exclusion, Ms. Isaacson?

A. I think the State -- My understanding is the State just adopted the plan that was the fully insured plan design.

Q. Did the State undertake any review of the plan design when it adopted it?

A. I was not involved in that decision. I don't know.

Q. Did the ADOA undertake any review while you were the benefits director of the plan design?

A. Those -- Yes.

Q. Did it -- did it review -- How did it go about that review?

A. Based on recommendations on an annual basis

Q. And then it says estimated cost per utilization is $10,884. Would you have considered that high for a cost per utilization?

A. No.

Q. And so finally the average annual cost it says $130,419. Would you have considered that a high annual cost?

A. No.

Q. Ms. Isaacson, would you turn to Tab 5 in this binder. And we'll ask the madam reporter to mark that as Exhibit 5. The first page of which is Bates stamped AZSTATE.006152.

Ms. Isaacson, do you recognize this document?

A. Yes.

Q. And what is it?

A. It's an email from Kelly Sharritts to me, copying Michael Meisner, regarding transgender coverage.

Q. And did you review this document in preparation for your deposition?

A. Yes.

Q. Did you recall the contents of this document even before that preparation?

A. No.

Q. Do you recall receiving this -- this email from

Ms. Sharritts?

A. I don't specifically recollect it, no, but I don't doubt its existence or that it happened.

Q. Well, what about the information contained in here? Is this -- Do you recall this information?

A. Generally, yes.

Q. What do you recall about it generally?

A. That she prepared an estimate of what the cost would be. That we had UHC -- I -- I didn't specifically recall that UHC was the outlier, but that there were varied estimates.

Q. So Ms. Isaacson, are you saying that you -- you generally recall the summary, the bolded summary here?

A. I generally recall that Kelly prepared -- you know, was doing research and preparing documents.

Q. And Ms. Sharritts estimated here that the utilizations estimates range from one to 11 claims per year; is that right?

A. Yes.

Q. And that the average annual cost was 130,000 to 582,000; is that right?

A. Yes.

Q. And that this would have been 0.02 percent to 0.08 percent of the 711 million in medical costs; is that right?

A. Yes.
Q. Is that 711 million in medical costs the average cost -- medical cost of the plan per year?
A. That sounds about right.
Q. So do you believe Ms. Sharritts was referencing here that the average cost of providing -- of removing the exclusion for transsexual surgery would be about 0.02 percent to 0.08 percent of the plan's average medical cost?
A. Yes.
Q. And then you referenced earlier that you recall that UHC had been an outlier in estimating a cost of 3.6 million.
A. I -- I remembered there was an outlier. Not until I looked at the memo did I remember that it was UHC.
Q. But UH -- Even with that outlier at 3.6 million in annual cost, Ms. Sharritts estimated here that that would work out to 0.17 to 0.77 dollars per month per employee; is that right?
A. I -- I -- I'm not sure that she's including it at the 3.6 million. But I -- her conclusion is that the per month increase to cover these costs for 60,000 employees we currently have would range from 17 cents to 77 cents per month per employee.
Q. So that range -- is that range for per month per

employee, would you consider that high?

A. No.

Q. Is it a significant increase over an estimate -- and I'm referring back to what was Exhibit 4, the per member per month cost increase, estimated increase of 86 cents?

A. I'm sorry, were you asking if Exhibit 4 --

Q. Yeah. So let me clarify.

So I'm asking -- This estimate here is on a per month per employee basis. Whereas in Exhibit 4 in the chart we looked at there was an estimate on a per member per month estimate.

A. Yes.

Q. Is -- does that difference -- Would that difference have mattered or would that have been a factor the ADOA considered?

A. No, I don't think so. I mean, they would have considered it. They consider all costs. But if it was significant, if that was what you -- I thought you were asking if it was significant.

Q. And it -- And that estimate for per month per employee is not significant; correct?

A. Right.

Q. Ms. Isaacson, did you read Ms. Sharritts' summary when she sent it to you?

A. Yes.
Q. And what did you do with this information?
A. Added it to the accumulation of what we had.
Q. Would you have forwarded it to anyone, such as the director of the ADOA?
A. I don't know. I don't think so.
Q. At what point would you have decided to share this information with the director of the ADOA?
A. I'm not sure I would have shared this email with him.
Q. Why not?
A. Just a level of detail that I'm not sure he would have read, needed.
Q. So would you have shared this information with the governor's office?
A. Probably not.
Q. And is that for the same reasons, that it's at a level of detail that you think they would not need?
A. Correct.
Q. Did you -- Do you have any reason to doubt the accuracy of which Ms. Sharritts is -- is summarizing here?
A. No.
Q. And did the ADOA do -- Did anyone else at the ADOA do as in depth an analysis of the coverage of transgender -- transsexual surgery as Ms. Sharritts did

A. Not that I recall.
Q. So what was the decision -- the decision -- In that meeting where the decision was made, what was that decision based off of?
A. We -- we reviewed the legal advice and -- and I don't -- I can't -- like I said, I can't remember if we covered any of the summary information or not, and -- and then a decision was made.
Q. And who made the decision?
A. The -- the decision was voiced by Christina Corieri.
Q. And who were the decision-makers in reaching it?
A. That I don't know.
Q. Was there a vote?
A. No.
Q. So did Christina Corieri announce the decision or was there a conference about the decision?
A. I took it as an announcement.
Q. Was there a discussion in that meeting about it or was -- did you attend this meeting and you were told what the decision was?
A. There wasn't really a discussion.
Q. So who do you understand to be the ultimate decision-makers on the decision of whether to continue the plan's exclusion of gender reassignment surgery?

Exhibit 8

In The Matter Of:

Toomey vs.

State of AZ

Scott Bender, Videotaped

March 31, 2021

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UNITED STATES DISTRICT COURT

DISTRICT OF ARIZONA

RUSSELL B. TOOMEY,	)	
	)	
Plaintiff,	)	
	)	
vs.	)	4:19-CV-00035
	)	
STATE OF ARIZONA; ARIZONA BOARD OF REGENTS, d/b/a UNIVERSITY OF ARIZONA, a governmental body of the State of Arizona; et al.,	)	
	)	
Defendants.	)	
	)	

VIDEOTAPED DEPOSITION OF SCOTT BENDER

Via Zoom Videoconference
March 31, 2021
8:00 a.m.
Phoenix, Arizona

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Prepared by:
Robin L. B. Osterode
CSR, RPR
CA CSR No. 7750
AZ CR No. 50695

And we need to make decisions each year as to how we're going to spend that money. And, unfortunately, it sort of ends up in an erosion of benefits for the employees and more cost sharing to the employees. That's just the nature of this business, unfortunately.

Q. Would the removal of a plan exclusion affect the contribution strategy?

A. It could, depending upon the cost.

Q. At what point would the removal of a plan exclusion affect the contribution strategy?

A. I can't give you a number.

Q. Is there a thre -- is there a ballpark threshold?

A. There's not a stated threshold that I'm aware of, no.

Q. What about an unstated threshold?

A. I'm not aware of that either. But I am --

Q. Practically --

I'm sorry, go ahead.

A. What I am aware of is that there's insufficient funds to manage the plan as it is, and there is not much appetite for any additional changes that would increase costs.

Q. Practically, in your experience working at the ADOA, what cost would cause a change to the contribution

strategy?

A. The biggest focus lately is around specialty medications and how do we handle those challenges. I mean, you can't watch TV without seeing three ads for new specialty drugs that are coming to the market. They've become an extremely expensive part of the plan. That is a focus of ours.

We follow recommendations of a pharmacy and therapeutics committee with our pharmacy benefit manager with those. But at some point we're going to have to have the realistic conversation of what do we exclude and are we going to continue to add everything that comes down the pike.

There are therapies that cost hundreds of thousands of dollars a year. For one person. And we need to make hard decisions as to are we going to continue to cover these things, or are we going to put limits on them.

Q. What are the costs of those specialty medications?

A. The -- first of all, the definition of what's considered a specialty varies from organization to organization. We sort of view it as over 500 or a thousand dollars a month or at least our PBM does. And they can go, you know, up to $500,000 a year or more.

When might the removal -- when might the removal of a plan exclusion not impact the contribution strategy? And actually, let me clarify, I think we're getting hung up on the word "impact."

When might the removal of a plan exclusion not change the contribution strategy?

A. I think it would not change if it were a minimal cost. And I believe we discussed between, you know, more than $500,000.

Q. Oh, okay. So I think that's -- so if a cost were around a million, I think that's where we landed, or above, that would impact the contribution strategy?

A. That could impact the contribution strategy, and it's something noteworthy.

Q. It's more likely to impact the contribution strategy than not at a million?

A. It's more likely at a million than it is at 500,000.

Q. Does the governor's office ever get involved in the decision-making process about a plan change before you've presented the change to them?

A. I can't think of a case like that.

Q. So, for instance, if you don't know -- say you're -- the network providers come to you with a proposed change to the plan, and you don't know the cost

record?

MR. WALL: Sorry, could you take us off the record while we fix this? And this actually might be a good time to take another break.

THE VIDEOGRAPHER: Off the record at 11:20 a.m.

(Recessed from 11:20 a.m. until 11:31 a.m.)

THE VIDEOGRAPHER: Back on the record at 11:31 a.m. Please proceed when ready.

BY MR. WALL:

Q. So, Mr. Bender, before we went on break, we were discussing the most recent changes to plan exclusions that you've encountered.

Do you recall that?

A. Yes.

Q. And so I think you said the most recent one was the clinical cancer trials.

A. Yes.

Q. And when was that -- when was that change to the plan? Well, let me ask, was the plan exclusion for that removed?

A. It was, yes.

Q. And when was that?

A. It was within the last six months.

Q. And then prior to that you'd spoke about 3-D mammography treatment?

A. Right.
Q. And when was that exclusion removed?
A. That was probably two years ago. Maybe 2019.
Q. And then before that, was there anything else -- was the transgender benefits exclusion the last modification before that?
A. I believe so, yes.
Q. And that was in 2017?
A. Yes.
Q. Or, rather, I should say --
A. Move forward to 2017, yes.
Q. So just to be clear, the plan was changed in 2017, the transgender benefits covered or excluded were changed in 20 -- for the 2017 plan year?
A. Correct.
Q. So let's take the 3-D mammography as an example, for instance. So there, Aetna came forward and said that they're going to start covering 3-D mammography. Correct?
A. Right.
Q. And then Blue Cross Blue Shields, UHC, and Cigna about a year later decided that they were going to start covering that service?
A. Right.
Q. So this was presented to the ADOA how? How did

it as such and it is their recommendation that we -- we include it, so we did.

Q. And the 3-D mammography treatment, that wasn't required by law, was it?

A. Not that I'm aware of, no. It is a preventative service, and we're required to offer mammograms, but I don't believe that particular type of mammogram is required by law.

Q. So on the 3-D mammography, you don't recall the governor's office being involved, but hypothetically say they were involved, once the governor's office makes the decision, do they then advance that to the JLBC for their favorable or disfavorable vote?

A. Something on a one-off like that, typically not. The JLBC is more concerned about, since they are a budget agency, they're more concerned about things that are going to have a material impact to the budget. And the treatment of one mammogram versus another would not have a material impact on the budget.

Q. What impact did that extension of that treatment have on the budget?

A. I don't recall. But I know that the pricing was close between 3-D and the standard.

Q. Was the additional cost of 3-D mammography below a million per year to the plan?

different estimates from the four different health plans, and just anecdotally from our actuary as to what he felt our exposure was, based on what he was seeing in the marketplace.

Q. So just to sum up, the ADOA had numerous different estimates of the cost from the various -- from the four network providers?

A. Right.

Q. And also, the in-house actuary, Mr. Meisner, had a different calculation of the cost?

A. Correct.

Q. So now I'm looking at the bottom-most bullet in this box on cost, that says, "Based on input from the vendors and ADOA's research, ADOA feels it can" safe -- "it can be safely say if transgender coverage is implemented, the cost would be under a dollar per employee per month. Approximately 50 cents per employee per month seems to be an agreed-upon amount based on ADOA's research."

Did I read that correctly, Mr. Bender?

A. Yes.

Q. So appreciating that you saw different estimates and a different estimate from Mr. Meisner later, would you consider this estimate here to be high?

A. A dollar per employee per month, is

approximately $60,000 [sic] a month, so $120,000 a year. In the overall scheme of the plan, I -- I would not say that that is a high cost.

Q. And if a dollar per month is not a high cost, then you would agree 50 cents per employee per month is also not a high cost?

A. That's right.

Q. When the ADOA is assessing the cost of a particular treatment, does it matter whether it's being calculated on a per employee per month basis or a per member per month basis?

A. I don't know that it necessarily matters. Both of them will get you to sort of an annual cost.

Q. And what about calculating as a percentage of total plan cost?

A. Same. We know what our annual plan costs, and if the recommendations are in various methodologies, we can account for that and convert everything to an annual total impact.

Q. So if you turn now, Mr. Bender, to the fourth physical page of this document, Bates number AZSTATE.009272.

A. Got it.

Q. Do you see that bottom box that says A-H-C-C-C-S?

Exhibit 11

In The Matter Of:

Toomey vs.

State of Arizona

Yvette Medina, Videotaped

February 18, 2021

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UNITED STATES DISTRICT COURT

DISTRICT OF ARIZONA

RUSSELL B. TOOMEY, Plaintiff, vs. STATE OF ARIZONA; ARIZONA BOARD OF REGENTS, d/b/a UNIVERSITY OF ARIZONA, a governmental body of the State of Arizona; et al., Defendants.	)	4:19-CV-00035

VIDEOTAPED DEPOSITION OF YVETTE MEDINA

Via Zoom Videoconference
February 18, 2021
8:30 a.m. (MST)
Phoenix, Arizona

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Prepared by:
Robin L. B. Osterode
CSR, RPR
CA CSR No. 7750
AZ CR No. 50695

Q. So there are instances in which the governor's office provides you, ADOA, with language that ends up in the plan change log?

A. Yeah. There could be instances, and this

10:17:57 was -- this -- I don't know if this was one of them, but there -- yes, there could be instances.

Q. Do you remember any specific instances?

A. No -- well, it's -- I can say that it was not often that they would give us information unless there

10:18:23 was something like this kind of situation where there was a court case happening that affects our plan. There could have been throughout the -- you know, each different plan year, but other than -- so we had this instance and -- I'm trying to think of other -- we had --

10:18:55 sometimes when the ACA would pass things or there was changes being made, like, federally and they would actually -- they would look at everything. So like our same-sex or domestic partners, they did -- they did for the -- the nondiscrimination transgender item and -- I'm

10:19:28 trying to think if they had feedback on ACA. I -- those are probably the only two.

Q. So when you say "they," do you mean the governor's office?

A. Yes.

10:19:45 Q. So would you say that the governor's office

limitation. Any experimental -- what's considered experimental or not medically necessary type of services. We have, gosh, lots of exclusions -- sorry, do you want me to name all the exclusions, because there are quite a few?

10:36:15

Q. Let me make this easier on both of us.

A. Okay.

Q. So you mentioned experimental. Would you say cosmetic surgeries also fall broadly under the exclusions?

10:36:31

A. It does. I -- I believe -- I would say that was a limitation. So we don't cover cosmetic surgery, but we would cover any -- someone that had cosmetic surgery, but it went -- it did not go so well, so they needed to get it fixed, because it could have been a medically necessary situation for, like, an emergency type of situation. So that would have been a limitation.

10:36:53

So we don't -- we don't cover cosmetic surgery for, you know, changing, like, a feature in the face, but if there was something happening that was causing medical issues, we would cover that to be treated.

10:37:13

Q. Would it be fair to say that you don't cover cosmetic surgeries, but if it's medically necessary, then you do?

MR. CURTIS: Objection; form of the question.

10:37:34

BY MS. SHEETS:

Q. You can answer.

A. Medically necessary, yeah, as deemed by the -- the plan with the vendors themselves. So, yes, if they consider it to be medically necessary, then yes.

Q. So if cosmetic surgery is found under the plan to be medically necessary, then it would be covered?

A. Yes.

Q. And experimental surgery, is there any process for determining whether that's medically necessary?

A. The process wouldn't fall on the plan, the process would fall onto the actual medical vendor themselves, because they have medical guidelines that they follow. So they have to follow their medically necessarily -- so -- excuse me -- their medically necessary guidelines to follow it.

Q. And if those guidelines are followed and a procedure is deemed medically necessary, would it then be covered even if it was considered experimental?

A. It would if the language said this is experimental, or it's not covered unless it's medically necessary.

Q. So it sounds like the keywords here are "unless it's medically necessary"; is that right?

A. Correct. Yes.

Q. So moving back to the document here, item 51. So we're going to walk through an example of an exclusion, because I really want to understand how the process works for developing these and changing them. So
10:39:38 for item 51, in the "Proposed Change" column, we have, "Remove exclusion as the plan will cover services, if approved by medical management as medically necessary."

Do you see that?

A. Yes.

10:39:54 Q. And what does that mean?

A. So this is for orthognathic surgery or treatment. We had it as an exclusion, but when we remove it from the exclusions, if someone were to go get that treatment and it was considered medically necessary by
10:40:18 the medical vendor, then it would be covered. If it --

Q. And -- sorry. Please complete your answer, Ms. Medina.

A. If the language stayed, then it would be excluded.

10:40:34 Q. So if the current language listed under "Current Plan Language" stayed for orthognathic treatment or surgery, then the exclusion would hold?

A. Correct.

Q. Is that -- and by the exclusion holding, I mean
10:40:57 any orthognathic surgery, whether or not it was medically

necessary, would be excluded from the plan; is that right?

A. Not necessarily. Our plan does say that we will only cover medically necessary services.

10:41:14 Q. So as the current plan language for item 51 lists orthognathic surgery before including -- let me back up.

As the item 51, "Current Plan Language" stands, orthognathic surgery is excluded under the plan; is that

10:41:49 right?

A. That's correct.

Q. Under this "Current Plan Language" for item 51, is there an opportunity for someone to prove the orthognathic surgery medically necessary?

10:42:12 A. Because this is specifically excluded, even if it was medically necessary, it would not be covered because we specifically exclude it.

Q. So under this language, in the current plan language for item 51, even if orthognathic surgery was

10:42:35 medically necessary, it would be excluded under the plan?

A. Yes.

Q. And just so I understand, feel free to say you don't know, if you don't know, but what is orthognathic surgery?

10:42:53 A. I don't know the full details of it, but I know

it does have something to do with the jaw and the face and -- and that particular area of -- and dental.

Q. Would it -- like an underbite fall under orthognathic surgery?

10:43:16 MR. CURTIS: Objection; form.

THE WITNESS: Yeah, I don't know.

BY MS. SHEETS:

Q. That's fine. But let's say an underbite did fall into orthognathic surgery, if someone needed surgery

10:43:31 and it was deemed medically necessary for an underbite and this current plan language stood, would that be covered under the plan?

A. No.

Q. Let's move on to the proposed plan language.

10:44:00 So for item 51, it appears to be the same language but crossed out in red.

Do you see that?

A. Yes.

Q. What does that mean?

10:44:12 A. That means that we are removing that language from the plan.

Q. And if you recall, what does that mean in this particular instance, in item 51, to have removed the exclusion for orthognathic surgery?

10:44:37 A. So that means if someone presented with that

type of treatment in the next plan year, the 2012 plan year, it would be covered on the plan if it was medically necessary.

Q. And if for some reason under the new plan language getting rid of the exclusion for orthognathic surgery, and orthognathic surgery was found to be not medically necessary in the first instance, would the person seeking coverage have an opportunity to appeal that decision?

A. Yes, they would.

Q. Are you familiar with the appeals process if someone is denied coverage?

A. Yes, I am.

Q. In what capacity? What is your role in that process, if any?

A. So the appeals process goes through our vendors. They have the first, second, third -- we have three levels of appeal, and they all go through our medical plan vendor. So your first level of -- you get three levels, the first two are with the actual appeals team at the medical plan. So an appeals team reviews level one, and if it's still denied, then they go to a level two and a different appeals team reviews the information in the appeal. And if that's denied, then you -- you have a third level, which is an external