



Increasing access to comprehensive, effective, and affirming healthcare services for trans and gender-variant communities

Primary Care Protocol for Transgender Patient Care

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Center of Excellence for Transgender Health

University of California, San Francisco, Department of Family and Community Medicine

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Introduction

The Center of Excellence for Transgender Health (CoE) combines the unique strengths and resources of a nationally renowned training and capacity building institution, the Pacific AIDS Education and Training Center (PAETC), and an internationally recognized leader in HIV prevention research, the Center for AIDS Prevention Studies (CAPS), both of which are housed at the University of California San Francisco, one of the top five medical research and educational institutions in the United States. The mission of the CoE is to increase access to comprehensive, effective and affirming health care services for our trans and gender-variant communities.

The efforts of the CoE are directed toward improving the overall health and well-being of transgender individuals by developing and implementing programs in response to community identified needs. CoE projects include community perspectives by actively engaging a national advisory board (NAB) of 14 transgender identified leaders from throughout the country. The collective experience of our diverse and talented NAB assures that programs address issues that are timely and relevant to the community. To learn more about specific programs, please follow the CoE Programs link.

Needs assessment studies conducted in major cities across the United States since the late 1990s have shown that access to primary health care is highly problematic for many transgender and transsexual people. (See [Bockting and Avery, Eds.](#) [2005])

This protocol was created within the Department of Family and Community Medicine at the University of California San Francisco. It remains a work in progress, and will be annotated and/or updated when new data is available and validated. This protocol is intended to serve two purposes:

- **Provide accurate, peer-reviewed medical guidance.** This protocol was developed under the supervision of [eight physicians with extensive experience in treating transgender patients](#).
- **Provide a resource.** This protocol contains references to additional materials that may be accessed for further study and shared with other provider colleagues and support staff to improve treatment capabilities as well as access to care for transgender patients.

Many physicians can learn a great deal about transgender care directly from their patients; however, patients may receive inaccurate information through community grapevines or other non-medical sources. Physicians are encouraged to review the existing medical research and clinical practice guidelines developed by a small number of treatment centers, and to be alert to new developments in this emerging field. (See section [References](#))

Professional associations such as the World Professional Association for Transgender Health, www.wpath.org, and the Gay and Lesbian Medical Association, www.gima.org, both of which hold biennial or annual symposia, and provider networks, which are informal and newly developing, are recommended sources for professional development in this field. It should be noted that this protocol is not a substitute for the WPATH Standards of Care (SOC), which describe diagnostic criteria and minimal, flexible guidelines concerning eligibility for certain transition-related treatments. Providers treating trans people who are undergoing or have undergone transition-related treatments should become familiar with the WPATH SOC, which is currently in its 6th edition, with edition 7 (a significant revision) anticipated to be released in the fall of 2011.



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Disclaimer

Medical science is constantly evolving. New research about treatments, changes in medical standards and diagnostic testing emerges almost daily. Definitive answers to some questions may not always be known, especially in the treatment of rare conditions such as transsexualism. The Medical Advisory Board for this protocol and the Center of Excellence for Transgender Health at UCSF have made every effort to ensure the information in this protocol is accurate and up-to-date; however, readers of this and every medical text should always confirm information from other sources before using it for patient care. This protocol cannot guarantee any specific outcome, nor does it establish a standard of care, and it should not be considered inclusive of all proper approaches or methods, or exclusive of others. Treatment decisions must be made based upon the independent judgment of health care providers and each patient's individual circumstances. In particular, since cross-sex hormone administration is not yet approved by the FDA for treatment of gender dysphoria, gender identity disorder, or transsexualism, readers are encouraged to consult with additional sources, including other providers experienced in the treatment of transgender patients (such as through local or regional consortia, the membership of the World Professional Association for Transgender Health, WPATH, www.wpath.org, or through contacting the [Center of Excellence for Transgender Health](#)) before applying information in these protocols for patient care. Please consult the package inserts for any medications for further information about doses, contraindications, and adverse effects before prescribing any medicine.

Questions or comments, whether positive or negative, are welcome. When possible, UCSF staff will reply to questions and comments.

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Transgender Patients

Transgender patients come in all shapes, sizes, ages, races, sexual orientations, socio-economic levels, and educational backgrounds. They sometimes have bodies that don't match their gender identity or presentation, (See section [Transgender Terminology](#)) or they may have had (or want to have) medical treatments to modify their bodies to affirm their gender. Typically, treatments consist of cross-sex hormone administration (see section [Hormone Administration](#)), and reconstructive surgery (see section [Surgical Options](#)). Many gender-variant people do not identify with the terms 'transgender' or 'transsexual' (see section [Transgender Terminology](#)); providers should not assume that all gender-variant people have the same attitudes, behaviors, beliefs, experience, or understanding of their experience.

Few physicians currently in practice are introduced during their formal education to the changing needs of transgender patients. It is therefore no surprise that practitioners may experience discomfort with the unknown when meeting patients whose gender identity or presentation does not correspond with their natal assigned sex. Further, practitioners may have acquired misinformation which may inhibit them from providing optimal care to transgender patients.

There are two crucial concepts that providers should keep in mind when treating transgender patients:

1. Honor the patient's preferred gender identity and use the pronouns and terminology that the patient prefers.
2. A transgender patient's body may have elements, traits, or characteristics that do not conform to the patient's gender identity: For trans people, their anatomy does not define them, even though that anatomy may require treatments that are typically provided for persons of the opposite sex. Do not treat a transgender patient as if she or he is nothing more than her or his body. Respect the patient's gender identity, and treat the body as if it belongs to them, rather than defines them.

It is possible to act on these concepts when the physician knows that the patient is transgender. If a patient intake form is used that asks questions about both the patient's current gender identity and their sex-assigned-at-birth (see section [Patient Intake](#)), it is easier to determine a patient's transgender status, but without such a mechanism the physician must rely on either a patient's self-disclosure in conversation or discovery during physical exam that the patient has gender-incongruent anatomy.

Once aware that a patient is transgender, resist the temptation to define the person by their sex assigned at birth, and give weight to the patient's gender identity and preferred pronouns.

The most important principle to apply in general prevention and screening is to provide care for the anatomy that is present, regardless of the patient's self-description or identification, presenting gender, or legal status, and always to provide that care in a sensitive, respectful, and affirming manner that recognizes and honors the patient's self-description or self-identification.



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Evidence-Based Transgender Medicine

"Published transgender-specific level 1 evidence is essentially non-existent. [...] Long-term, prospective studies for most transgender-specific health issues are lacking, thus resulting in variable preventive care recommendations based primarily on expert opinion. However, by utilizing an increasing body of peer-reviewed, scientific research on transgender health, along with relevant data from the general population, one can develop an evidence-based approach to preventive care for patients who are transgendered or transsexual." -- Jamie Feldman, M.D. ([Feldman, J \[2007\]](#))

Many thousands of transgender and transsexual people have been treated with cross-sex hormones (see section [Hormone Administration](#)) and surgical procedures for over 70 years in Western Europe and over 60 years in America. Yet because of the stigma of gender-variance and sex reassignment (also called sex affirmation, or gender confirmation) which discourages funding for research, and because of the difficulty of conducting randomized trials involving cross-sex treatments, very little specific information about treatment actually exists beyond case reports & small scale studies on specific clinical issues.

Data collection weaknesses further impacting the marginalization of transgender and transsexual people include lack of researcher access to the population, lack of cohesive community networks within the population, disagreement with terminology used to refer to the population (which affects community trust and impacts researcher effectiveness; e.g., referring to transwomen as "male transsexuals" or "men who have sex with men (MSM)" alienates potential subjects), and researchers' use of definitions to describe both transgender and transsexual people (see section [Transgender Terminology](#)) that artificially circumscribe the pool of available research subjects (e.g., describing transsexual people as only those who have previously undergone genital reconstruction). The UCSF Center of Excellence for Transgender Health offers [recommendations for data collection](#).

To address the health care needs of their transgender and transsexual patients, clinicians have extrapolated from studies based on non-transgender populations, and adapted findings from the few long-term cross-sex hormonal assessments done in the Netherlands by Gooren, et al combined with their own clinical experience, to support clinical judgments regarding basic health care with general success. ([Gooren, LJ \[2008\]](#))

The Center of Excellence for Transgender Health's [Medical Advisory Board](#) (MAB), consisting of eight physicians and one nurse practitioner, came together to develop a common-sense approach to transgender care. The MAB members are predominantly based in California (one physician is from Arizona) because the project to develop this protocol was originally targeted to California-based practitioners. Medicine is often practiced differently based on geographic region, and the CoE is interested to learn how physicians in other regions adapt our recommendations to their own practice. [Please write to the CoE with comments.](#)

This protocol is based on a critical review of the medical literature that exists on transgender health care, and on the physicians' many combined years of clinical practice. In evaluating their recommendations, the MAB members employed the [Strength-of-Recommendation Taxonomy](#) (SOR) used by the American Academy of Family Physicians. We applied this taxonomy to transgender-related practice using the following grade definitions and notation to indicate strength of recommendations and the basis on which the recommendations are made:

Grade Definitions

A	Relatively low quality transgender-specific retrospective or observational study data
B	Inconsistent, or limited-quality patient oriented evidence obtained from other disciplines that the experts have adapted to transgender contexts

C Expert opinion, derived from clinical experience, study of prior publications, and consensus among the providers serving on the Medical Advisory Board

This protocol emphasizes the areas of special consideration in which transgender-related medical treatments may have an impact on a patient's well-being.

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Aging Issues: Special Considerations

Considerations for beginning or continuing hormone treatment in older patients

There is no set upper age limit for hormonal therapy. Trans male patients beginning hormones after age 40 generally will progress more slowly if exhibiting desired results. (Grade C)

Osteoporosis has been reported in both older transmen and transwomen, and is frequently associated with poor compliance with the hormone regimen. (Grade B)

Some patients prefer to stop hormonal therapy; for post-gonadectomy patients under age 50, this is not recommended due to bone loss, and potential symptoms similar to menopause in both transwomen and transmen. (Grade A, B, C)

Upper age limits that might preclude surgical interventions should be considered. There is currently no information about outcomes for older patients, and some surgeons impose upper age limits for specific procedures. Older trans people considering surgery should consult with surgeon to determine what physical readiness requirements might be advisable to be medically eligible for surgery. Anticipated recovery times may be longer.

Additional screenings to consider in older patients

- **Transwomen patients on feminizing hormone therapy:** Mammograms are recommended for transwomen when patients have been using estrogen for at least 30 years AND are at least 50 years of age, unless there is a strong family history of early breast or ovarian cancer. (Grade C)

Follow [USPSTF guidelines for prostate screening](#). PSA is not useful if patient is on estrogen. (Grade B)

- **Transmen without hysterectomy:** Pelvic exams every 1-3 years for patients over age 40 or with a family history of uterine or ovarian cancer increase to every year if polycystic ovarian syndrome (PCOS) (see [MedlinePlus](#)) is present. Consider hysterectomy and oophorectomy if the patient's health will not be adversely affected by surgery, or if the patient is unable to tolerate pelvic exams. (Grade B, C)

- **Transmen:** Consider bone density screening if age > 60 and if taking testosterone for < 5-10 years; if taking testosterone for > 5-10 years, consider at age 50+, earlier if additional risk factors for osteoporosis are present; recommend supplemental calcium and vitamin D in accordance with current osteoporosis prevention guidelines to help maintain bone density. Note that this may be applied to transmen at ages younger than typical starting age for osteoporosis prevention treatment due to the unknown effect of testosterone on bone density. (Grade B, C)

Transmen stopping testosterone will experience loss of libido, hot flashes, loss of body hair, muscle tone, and weight redistribution in a female pattern. (Grade C)



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Assessing Readiness for Hormones

Informed consent requires a detailed discussion with the patient covering the risks and benefits of treatment. See below for sample forms. All treatment for minors requires parental/guardian consent, usually from both parents.

The only absolute medical contra-indication to initiating or maintaining estrogen or testosterone therapy is an estrogen- or testosterone-sensitive cancer. Other conditions such as obesity, cardiovascular disease, dyslipidemas, or other conditions should not preclude treatment in the setting informed consent. While in the past, history of venous thromboembolism was a contraindication to estrogen hormone replacement, recent data shows that safer estrogen preparations, such as transdermal, do not preclude this. (Grade C)

If prescribing cross-sex hormones for a patient who has not used them before, assess for pre-existing physical and mental health conditions to aid in determining which preparation and dosage to prescribe (see section [Hormone Administration](#)). It is the clinician's responsibility to monitor the effects of cross-sex hormones.

Sample Consent Forms

- [Sample #1: Patient considering feminizing hormones for transition from male to female](#) (PDF, 76KB)
- [Sample #2: Patient considering testosterone for transition from female to male](#) (PDF, 79KB)
- [Sample #3: Feminizing medications for transgender clients](#) (PDF, 160KB)
- [Sample #4: Testosterone for transgender patients](#) (PDF, 159KB)
- [Sample #5: Feminizing medications for transgender clients -- minors and parents and guardians](#) (PDF, 127 KB)



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Baseline Laboratory Tests

- **Essentials for transwomen:** Fasting lipid panel (if on oral estrogen). If taking spironolactone, then include potassium and creatinine). Use F reference values for transwomen taking estrogens. Creatinine clearance should be a clinical judgment based on muscle mass and body fat distribution.

The standard of testing liver function in transwomen is based on older studies with methodological flaws, using formulations no longer prescribed (ethinyl estradiol), and not controlling for conditions that cause elevated liver function including alcohol and hepatitis B. Transient elevations with no clinical significance were included in the evidence that estrogen causes liver abnormalities. There is no current clinical evidence for checking liver function in transwomen using estrogen. Current publications make no mention of liver function abnormalities in relation to estrogen use. However, it may be useful to check transaminases if patient is taking oral estrogen. (Grade A, B)

- **Essentials for transmen:** Hemoglobin, LDL/HDL. Use M reference values for transmen taking testosterone. (Grade C)

- **Considerations with respect to laboratory tests:**

Family history, age, concomitant illnesses, sexual activity, other relevant risk factors.



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Fertility Issues

Discuss fertility issues with patients considering hormone therapy. Cross-sex hormone use may reduce fertility, and this may be permanent even if hormones are discontinued. Estrogen may have the effect of reducing libido, erectile function, and ejaculation. Testosterone generally increases libido. Note: Even though testosterone reduces fertility in transmen, testosterone is not a contraceptive substance; transmen having unprotected sex with fertile non-trans men are at risk for pregnancy as well as STIs (see section [Sexual Health](#)).

Cryo-Banking Options

- **CryoChoice**

CryoChoice maintains an FDA registered sperm bank which has processed and stored thousands of samples for clinical use. They provide home collection kits for privately banking sperm.

Tel: 800-619-7869 (Toll Free)

Web: www.cryochoice.com

- **The Fertility and Gynecology Center**

9833 Blue Larkspur Ln., Monterey, CA 93940

Tel: 877-733-4483

Web: www.montereybayivf.com

- **Fertility Physicians of Northern California**

2581 Samaritan Drive Suite 302, San Jose, CA 95124

Tel: 800-597-2234 Fax: 408-356-8954

Email: info@fpnc.com

Web: www.fpnc.com

- **The Sperm Bank of California (TSBC)**

TSBC is the first and only sperm bank in the United States to operate as a nonprofit organization. Their mission is to provide services, information, and resources to all individuals and families who choose to create or expand their families through donor insemination and sperm storage. Trans-friendly.

2115 Milvia St. Suite 201, Berkeley, CA 94704

Tel: 510-841-1858 Fax: 510-841-0332

Email: info@thespermbankofca.org

Web: www.thespermbankofca.org

- **Stanford University IVF/ART Program**

Department of Obstetrics and Gynecology

900 Welch Rd Suite 350, Stanford, CA 94304

Tel: 650-498-7911 Fax: 650-498-6175

Email: fertilitycenter@stanford.edu

Web: www.stanfordivf.com

- **UCSF Center for Reproductive Health**

2356 Sutter St, 7th Floor, San Francisco, CA 94115

Tel: 415-353-7475 Fax: 415-353-7744

Email: info@ucsfivf.org

Web: www.ucsfivf.org

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Follow-up Care

Patients may have ongoing psychosocial and primary care needs.

Most medical problems that arise in the transgender patient are not secondary to cross-sex hormone use. (Grade A)

Patients initiating hormones: follow up medically at 4 weeks, 3 months, 6 months and every 6-12 months thereafter (more frequently if other problems arise). Attention is usually directed to BP, side effects, emotional changes, sexuality, weight, and quality of life (risk behaviors if indicated). Clinical progress should be monitored through assessment of subjective and objective physical and emotional changes.

Consider supplemental calcium and vitamin D in accordance with current osteoporosis prevention guidelines to help maintain bone density. Note that this may be applied to transmen at ages younger than typical starting age for osteoporosis prevention treatment due to the unknown effect of testosterone on bone density. (Grade B, C)

First Few Follow-up Visits -- 4 weeks to 6 months

Assess for desired and adverse effects of medication. Check weight, blood pressure. Review health maintenance. Provide directed physical exam as needed. Discuss social adjustment, libido and sexual behavior, and quality of life (risk behaviors if indicated).

- **Transwomen:** If on spironolactone (an anti-androgen medication), check potassium.
- **Transmen:** Assess menses; anticipate amenorrhea within 2-3 months. If menses persist, consider increased dosage or use of a progestagen.

Half-yearly Visit

Assess for desired and adverse effects of medication. Check weight, blood pressure. Review health maintenance. Provide directed physical exam as needed. Discuss social adjustment, libido and sexual behavior, and quality of life (risk behaviors if indicated).

- **Transwomen:** If spironolactone dose increased, consider potassium recheck. Testosterone is generally not checked unless patients have little evidence of feminization.
- **Transmen:** Check testosterone level if after 6 months on stable regimen patient is having a difficult time virilizing or stopping menses, or experiencing anxiety or other mood symptoms. Check testosterone levels mid-cycle between injections, at times in trough (especially if mood energy symptoms). Be sure to compare hemoglobin levels to age-appropriate male levels. Follow-up labs are done generally every 6-12 months (6 on older patients, patients with other serious illnesses, and 12 for young healthy patients).

Annual Visit

Assess for desired and adverse effects of medication. Check blood pressure and weight. Review health maintenance. Provide directed physical exam as needed. Discuss social adjustment, libido and sexual behavior, and quality of life (risk behaviors if indicated).

- **Transwomen:** Prolactin screening once at 1-2 years after beginning HRT.

- Annual mammogram beginning at age 40-50 depending on risk factors, length on hormones, family history. (Grade C)
- Annual rectal exam +/- PSA beginning at age 50, taking into consideration family and personal history and risk factors.
- **Transmen:** Check testosterone level at 6 months or when on stable regimen, when having a difficult time virilizing or stopping menses, or experiencing anxiety. Check testosterone levels mid-cycle between injections, at times in trough (especially if mood or energy symptoms are present). Be sure to compare hemoglobin levels to age-appropriate male levels.

Annual lipids only for patients over 30 or who have hyperlipidemia before or after starting testosterone.

Annual mammogram beginning at age 40-50 depending on risk factors, family history, and presence of breast tissue. Did patient have mastectomy or simple liposuction/reduction? Some mammary tissue may remain with liposuction/reduction. Palpate chest for transmen who have undergone mastectomy. (Grade C)

Bimanual pelvic exam every 1-2 years screening for masses. (Grade C)

Pap screening every 2-3 years based on current recommendations (strongly recommended, but not required).

Pelvic ultrasound as needed for new bleeding, and perhaps every few years until hysterectomy/oophorectomy.

TSH every year or two or as needed.

Bone density at 5-10 yrs after beginning testosterone, and periodically thereafter. (Grade B)

Post-Surgical Follow-up

- **Transwomen:** Examine for difficulties in healing. After pedicled penile flap technique vaginoplasty, the patient must dilate 3-4 times daily, per surgeon's recommendations, using progressively larger dilators. After the initial 6-12 month period, if the patient is having regular sexual intercourse, no further dilation is required. Otherwise, continue routine dilation once or twice per week. Lubrication will be necessary for intercourse.

Post-operative complications may include bleeding, infection, or impaired wound healing. Possible late complications include stenosis of the new urethral meatus. Refer to a surgeon with expertise.

Pap smears in neovaginas are not indicated; the neovagina is lined with keratinized epithelium and cannot be evaluated with a Pap smear. Perform periodic visual inspection with a speculum, looking for genital warts, erosions, and other lesions. If STI is suspected, do a culture swab not PCR. Neovaginal walls are usually skin, not mucosa; when it is mucosa, it is urethral or colon mucosa.

- **Transmen:** Examine for difficulties in healing. Complications in chest reconstruction may include hematoma, partial or total nipple necrosis, and abscess formation. Drains and compression bandages do not always prevent these complications. Keloid scarring may occur, particularly in people of color. In some instances, scarring may be lessened by ensuring that incisions are not stretched prematurely during healing. Complications of genital reconstruction include implant extrusion; urethral fistulas and strictures, loss of sensation and tissue necrosis in the neophallus created by phalloplasty (not generally a problem with metoidioplasty).



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General Prevention and Screening

Most medical problems that arise in the transgender patient are not secondary to cross-sex hormone use.

The most important principle to apply in general prevention and screening is to provide care for the anatomy that is present, regardless of the patient's self-description or identification, presenting gender, or legal status, and always to provide that care in a sensitive, respectful, and affirm manner that recognizes and honors the patient's self-description or identification.

This protocol emphasizes the areas of special consideration in which transgender-related medical treatments may have an impact on a patient's well-being.

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Cancer

Screen transgender or transsexual people who have not used cross-sex hormones or had gender-affirming surgery using the same criteria and parameters as for persons of their natal sex.

- **Transwomen, past or current hormone use:** Breast-screening mammography in patients over age 50 with additional risk factors (e.g., estrogen and progestin use > 5 years, positive family history, BMI > 35).
 - **Prostate:** PSA is falsely low in androgen-deficient setting, even in presence of cancer; only consider PSA screening in high risk patients. Use a digital rectal exam to evaluate the prostate in all transwomen. (Grade C)

Pap smears in neovaginas are not indicated; the neovagina is lined with keratinized epithelium and cannot be evaluated with a Pap smear. Perform periodic visual inspection with a speculum, looking for genital warts, erosions, and other lesions. If STI is suspected, do a culture swab not PCR. Neovaginal walls are usually skin, not mucosa; when it is mucosa, it is urethral or colon mucosa.

Follow standard screening recommendations for other cancers.

- **Transmen, past or current hormone use:**

- *Breast cancer*: annual chest wall/axillary exam; mammography as for natal females (not needed following chest reconstruction, but consider if only a reduction was performed).
- *Cervical cancer*: following total hysterectomy, if prior history of high-grade cervical dysplasia and/or cervical cancer, do annual Pap smear of vaginal cuff until 3 normal tests are documented, then continue Pap every 2-3 years.
- *Cervical cancer if ovaries were removed, but uterus/cervix remain intact*: follow Pap guidelines for natal females; may defer if no history of genital sexual activity; inform pathologist of current or prior testosterone use (cervical atrophy can mimic dysplasia);
- *Uterine cancer*: evaluate spontaneous vaginal bleeding in the absence of a mitigating factor (missed testosterone doses, excessive testosterone dosing leading to increased estrogen levels, weight changes, thyroid disorders, etc.) as for post-menopausal natal females; consider hysterectomy if fertility is not an issue, patient is > 40 years, and health will not be adversely affected by surgery.
- *If no hysterectomy*: follow current published recommended guidelines for natal females. (Grade C)

Follow standard screening recommendations for other cancers.

Cardiovascular Disease

Transgender or transsexual people who have not used cross-sex hormones require the same screening criteria as persons of their natal sex.

Aggressively screen and treat for known cardiovascular risk factors. Consider daily aspirin therapy in patients at high risk for CAD.

- **Transwomen planning to start feminizing hormones within 1-3 years**: try to bring systolic pressure to ≤ 130 mm Hg and diastolic pressure to ≤ 90 mm Hg, and bring LDL to ≤ 135 mg/dL (3.5 mmol/L).
- **Transwomen currently taking estrogen**:
 - *CAD/Cerebro-vascular disease*: closely monitor for cardiac events or symptoms, especially during the first 1-2 years of hormone therapy; if patient at high risk (including pre-existing CAD) use transdermal estrogen, reduce estrogen dose, and omit progestin from the regimen. (Grade A, C)
 - *Hypertension*: monitor blood pressure every 1-3 months: goal = systolic pressure ≤ 130 mm Hg and diastolic pressure to ≤ 90 mm Hg; consider using spironolactone as part of antihypertensive regimen.
 - *Lipids*: annual fasting lipid profile; treat high cholesterol to LDL goal of to ≤ 135 mg/dL (3.5 mmol/L) for low-moderate risk patients, and to ≤ 96 mg/dL (2.5 mmol/L) for high risk patients.
- **Transmen not currently taking testosterone**: screen and treat hyperlipidemia as with non-transgender patients.
- **Transmen planning to start masculinizing hormones within 1-3 years**: try to bring systolic pressure to ≤ 130 mm Hg and diastolic pressure to ≤ 90 mm Hg, and bring LDL to ≤ 135 mg/dL (3.5 mmol/L).
- **Transmen currently taking testosterone**: Same as for transwomen taking estrogen, except with respect to lipids. Annual fasting lipid profile for hyperlipidemia, avoid supraphysiologic testosterone levels; daily topical or weekly IM testosterone regimens are preferable to biweekly IM injection. LDL goal of to ≤ 135 mg/dL (3.5 mmol/L) for low-moderate risk patients, and to ≤ 96 mg/dL (2.5 mmol/L) for high risk patients.

Diabetes Mellitus

Transgender or transsexual people who have not used cross-sex hormones require the same screening criteria as persons of their natal sex.

- **Transwomen currently taking estrogen:** consider annual fasting glucose test, esp. if family history of diabetes and/or > 12 pounds weight gain. Consider glucose tolerance testing and/or A1C test if evidence of impaired glucose tolerance without diabetes. Treat diabetes according guidelines for non-transgender patients; if medications are indicated, include insulin sensitizing agent. Consider decreasing estrogen if glucose is difficult to control or patient is unable to lose weight. (Grade A, C)
- **Transmen currently taking testosterone:** screen and treat as with non-transgender patients. Consider screening (by patient history) for polycystic ovarian syndrome (PCOS); diabetes screening is indicated if PCOS is present.

Diet and Lifestyle

- **Transmen** who have not had top surgery may intentionally carry extra weight to obscure breast and hip appearance. Some transmen with large breasts may be hesitant to exercise due to physical discomfort or feeling uncomfortable in tight-fitting athletic apparel. Conversely, some transmen may not realize the increased metabolic demands when taking testosterone. Patients having difficulty gaining weight or muscle mass with fatigue or anxiety should be screened for dietary protein, calorie and micronutrient/vitamin deficits. Appropriate intake should be adjusted for appropriate male age and activity levels.
- **Transwomen** may have eating disorders such as anorexia or may intentionally take in fewer calories than necessary in order to maintain a slight build. Some transwomen might feel that exercise is a more masculine trait and therefore avoid it. Remind transwomen that exercise does not have to involve bodybuilding and that many non-transgender women exercise regularly.

Mental Health

Screen for depression, anxiety, bipolar disorder or history of trauma. Refer, if needed, to a mental health provider who is capable of assessing all patients and treating transgender people without denying their gender identity. (See section [Mental Health](#))

Musculoskeletal Health

Transgender or transsexual people who have not used cross-sex hormones require the same screening criteria as persons of their natal sex.

All trans patients who take cross-sex hormones and/or have had or anticipate gonadectomy are recommended to take supplemental calcium and vitamin D in accordance with current osteoporosis prevention guidelines to help maintain bone density. Note that this may be applied to transmen at ages younger than typical starting age for osteoporosis prevention treatment due to the unknown effect of testosterone on bone density. (Grade A, B, C)

- **Transwomen currently taking estrogen:** Exercise may help maintain muscle tone.
- **Transwomen, pre-orchiectomy, regardless of hormone use:** To prevent osteoporosis, recommend calcium and vitamin D supplementation.
- **Transwomen, post-orchiectomy:** To prevent osteoporosis either maintain estrogen therapy or consider combination of calcium/vitamin D supplementation and bisphosphonate; consider bone density screening for agonadal patients who have been off estrogen for over 5 years. (Grade A, B, C)
- **Transmen currently taking testosterone:** To avoid tendon rupture in transmen involved in strength training, increase weight load gradually, with an emphasis on repetitions rather than weight. Emphasize stretching.
- **Transmen taking testosterone > 5-10 years, no oophorectomy:** To prevent osteoporosis, consider bone density screening if over age 50, earlier if additional risk factors are present; recommend supplemental calcium and vitamin D in accordance with current osteoporosis prevention guidelines to help maintain bone density.
- **Transmen, past or present testosterone use, post-oophorectomy (or total hysterectomy):** continue testosterone therapy to reduce risk of bone density loss; if contradictions to testosterone therapy, consider bisphosphonate. Consider bone density screening if over age 60 and taking testosterone for less than 5-10 years; if taking testosterone for over 5-10 years, consider at age 50+, earlier if additional risk factors for osteoporosis; recommend supplemental calcium and vitamin D in accordance with current osteoporosis prevention guidelines to help maintain bone density. Note that this may be applied to transmen at ages younger than typical starting age for osteoporosis prevention treatment due to the unknown effect of testosterone on bone density. (Grade A, B, C)

Pulmonary Screening

Screen for asthma, COPD, TB. Encourage smoking cessation. Presence of these conditions may preclude surgical interventions.

Sexual Health

Take a sexual history: inquire about past and current sexual contacts/total numbers; gender(s) and number of partners. Check for sexual orientation changes; ask if patient is aware that sexual orientation may change as they change their gender presentation or as hormonal changes occur; contraception, condom and barrier use/frequency; STI history; sexual abuse history; potentially risky sex practices (e.g., bondage, S&M, auto-erotic asphyxia, etc.). Self-destructive behaviors may indicate a need for mental health referral (see section Mental Health).

- **HIV and Hepatitis B/C screening/prevention:** if ongoing risk behaviors for sexual or blood-borne transmission (e.g., unprotected penile-vaginal or penile-anal intercourse, history of prior STIs, sharing needles for injection of hormones or illicit drugs), consider HIV and Hepatitis B screening every 6-12 months; otherwise consider HIV and Hepatitis B/C screening at least once during lifetime. Treat STIs according to recommended guidelines for non-transgender patients; offer Hepatitis B vaccination if patient is not already immune.

HIV is not a contraindication or precaution for any transgender treatment. Treatment with hormones is frequently an incentive for patients to address their HIV disease. Providers of care for transgender people should enhance their HIV expertise, and vice versa.

- **Considerations for both transwomen and transmen:** If patient reports ongoing risk factors (recurrent STIs, unprotected sex with a partner who might be at risk, unprotected anal/vaginal sex with more than one partner, psychosocial cofactors relating to unsafe sex), screen every 6 months for gonorrhea, chlamydia, and syphilis. Treat all patients with STIs and their partners according to recommended guidelines.

Internal genital exam should be based on patient's past and recent sexual history and comfort with exam, and discussion of the risks and benefits of the procedure. Use a gloved finger and/or an appropriate-sized speculum.

Discuss fertility issues with patients considering hormone therapy. Cross-sex hormone use may reduce fertility, and this may be permanent even if hormones are discontinued. Estrogen may have the effect of reducing libido, erectile function, and ejaculation. Testosterone generally increases libido. Note: Even though testosterone reduces fertility in patients, testosterone is not a contraceptive substance; transmen having unprotected sex with non-trans men are at risk for pregnancy as well as STIs.

- **Special considerations for transwomen:** Pap smears in neovaginas are not indicated. Perform periodic visual inspection with a speculum, looking for genital warts, erosions, and other lesions. If STI is suspected, do a culture swab, not PCR. Neovaginal walls are usually skin, not mucosa; when it is mucosa, it is urethral or colon mucosa.

Silicone Injections

Some transgender women may seek or have sought injections of free silicone oil into their hips, buttock, thighs, breasts, lips, or face. This may be performed by unscrupulous practitioners and may have happened abroad. Additionally, some laypersons may hold "pumping parties" where transwomen are injected using in some cases industrial grade silicone oil using minimal or absent sterile techniques. Risks associated with these procedures include local and systemic infection, embolization, painful granuloma formation, and a systemic inflammatory syndrome that can be fatal. Transwomen should be screened for prior or risk of future silicone injections and counselled appropriately.

Substance Use

Assess substance use. Screen for past and present use of tobacco, alcohol, and other drugs. Refer, if needed, to a transgender-competent chemical dependency program. (For tools, see SAMHSA/CSAT Treatment Improvement Protocols. Center for Substance Abuse Treatment. Rockville (MD): Substance Abuse and Mental Health Services Administration (US); 1993-.)

Thyroid Screening

Maintain a high index of suspicion for thyroid disorders and screen appropriately. Use of cross-sex hormone replacement with or without gonadectomy may cause overall endocrine imbalances.

Vaccinations

Assess whether vaccinations are up to date. Most recommended vaccinations are not sex-specific and therefore are the same as for any patient. Both transwomen and transmen who have sex with men may have increased risk of Hepatitis A and Meningococcal C: discuss vaccination.

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Harm Reduction

"Harm reduction" is a set of practical strategies that reduce negative consequences of drug use, meeting patients "where they're at," addressing the conditions of drug use or other risky behaviors, as well as the use or behavioral practice itself. (See: Harm Reduction Coalition information at www.harmreduction.org).

- Query patients already taking hormones supportively about their hormone usage (type, dosage, and frequency) and whether they have a prescription.
- Hormones procured on the internet or on the street may be of dubious quality. If injected hormones are used, educate about the perils of sharing needles. Needles used for testosterone injection should NOT be cleaned and reused.
- Prescribe hormones and needle/syringe assemblies and teach proper injection technique.
- Encourage physician monitoring rather than risky practices. Inquire about sexual partners, practices, and STI history; educate about safer sex, STI and HIV prevention.
- If the patient is a tobacco user, encourage cessation and provide resources.
- Assess for risk behaviors and address accordingly.

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Hormone Administration

The use of cross-sex hormones (estrogens in male-bodied people and androgens in female-bodied people) to balance gender (induce or maintain) the physical and psychological characteristics of the sex that matches the patient's gender identity [see section [Transgender Terminology](#)) is increasing around the world. Cross-sex hormone administration is currently an off-label use of both estrogens and androgens; however, over 50 years of clinical experience have shown that this practice is effective in treating gender dysphoria. (See Hembree, et al (2009) and Gooren, et al (2008) in [References](#).) It is important that the ability to understand and monitor this treatment becomes a part of primary care practice. This protocol is intended to aid in that process.

Not all transgender patients will want to take cross-sex hormones, but if a transgender patient does need to express a gender different from their assigned birth sex on a consistent basis, cross-sex hormones are the most common body modification that transgender patients can access for self-actualization, bringing the endocrine and psychological systems into balance.

An individual may already be receiving cross-sex hormones when they become the physician's patient. Review the current regimen in combination with a thorough assessment of the patient's general health to determine whether to recommend changes in dosage or preparation.

Most medical problems that arise in the transgender patient are not secondary to cross-sex hormone use.

Discuss fertility issues with all patients considering hormone therapy. (See section [Fertility Issues](#))

Note: Testosterone is not a contraceptive substance; transmen having unprotected sex with fertile non-trans males are at risk for pregnancy if they have not had a hysterectomy.

If prescribing cross-sex hormones for a patient who has not used them before, assess for pre-existing conditions, to aid in determining which preparation and dosage to prescribe (see recommendations below). It is the clinician's responsibility to monitor the effects of hormones. (See section [Assessing Readiness for Hormones](#))

Transwomen

Hormonal therapy for transwomen may include anti-androgen therapy as well as estrogen therapy. Non-oral estrogens, including sublingual, transdermal, and injectable hormones are preferable. These have the advantage of avoiding first pass through liver metabolism. (Grade B)

- **Dosing:** Sublingual (dissolve oral formulation under the tongue) 1-4mg estradiol/day (single or divided dose), 100-200mcg transdermal estradiol/day, 10-20mg estradiol valerate IM every 1-2 weeks (injections continue for no more than 2 years, then change to lower dosage). (Grade C)
- **Over 35/smokers:** Oral estrogens confer an increased risk of thromboembolic disease. (Grade B)
- **After gonaectomy:** Lower doses are recommended: 50-100mcg transdermal, 1-2mg sublingual estradiol, 1-2 sprays/day Evamist®. Titrate effect, considering patient tolerance. (Grade C)

- **Progesterone:** The risks and benefits of progesterone are not well-characterized. Some providers have found it to have positive effects on the nipple areola and libido. Mood effects may be positive or negative. Different progesterone regimens include daily 5 to 10mg medroxyprogesterone orally, 100-200mg prometrium at bedtime or oral or compounded micronized progesterone, or Depo-Provera 150mg IM every 3 months, for 2-3 years. There is a risk of significant weight gain and depression in some individuals. As per other studies using oral progesterone in post-menopausal women (e.g., the [Women's Health Initiative \[WHI\]](#) study), the use of medroxyprogesterone orally may increase the risk of coronary vascular disease whereas IM injections (i.e., Depo-Provera) may minimize this additional risk. (Grade B and C)
- **Anti-androgens:** Initial dose of spironolactone is 100mg daily in a single or divided dose, with titration up by 50mg weekly to a typical dose of 200mg daily (with occasional patients -- especially larger or younger -- requiring as much as 400mg daily). Dose may be divided bid or may be taken all at once in the A.M. (all at once in A.M. is advised against due to diuretic effects interrupting sleep). Check potassium. Progesterone may have some anti-androgenic activity, and may be an alternative if spironolactone is contraindicated. If patients have significant hair loss issues, finasteride may be added as an adjunct (even initially). Generally 1 - 5mg daily. If patients pay out of pocket, they may buy the 5mg tabs and divide them in half or quarters.

Other meds sometimes prescribed for transwomen

- Eutectic mixture of local anaesthetic (EMLA) and analgesics for hair removal. If no allergy: ibuprofen 400-600mg +/- hydrocodone 5-10mg 1 hour before treatments.
- Viagra® (or related drugs) for patients with significant sexual dysfunction.

Transmen

Hormone therapy for transmen consists of the androgen testosterone, which is available in several forms: intramuscular, transdermal patch or gel or subcutaneous implant. (Grade B)

Testosterone therapy is not withheld for hyperlipidemia.

Adult transmen are initiated on depo-testosterone 50-200mg IM every 2 weeks; most adults can start at 200mg. Doses are titrated to effect. Usual dose is 200mg q 2 weeks, but dosage may be split, e.g., 100mg q week. If patients have side effects attributable to peak or trough levels, doses are changed to q 7-10 days depending on patient's preference (weighing the adverse effects against the increased frequency of injections.) Some patients do well on lower doses, and weekly injections, especially those with history of trauma (avoiding excessive peaks and troughs, which may set off emotional reactions). Rarely, doses as high as 250mg q 2 weeks are needed, but usually only if trough levels remain in the low normal range on 200mg q 2 weeks. Excessive testosterone can convert to estrogen and impeded desired effects. (Grade C)

Patients should be taught to self-inject. A family member or friend may be taught to perform the injection for the patient. Patients who develop polycythemia may respond well to transdermal gel preparations.

Allergy Alert: Testosterone cypionate is suspended in cottonseed oil. Testosterone enanthate is suspended in sesame oil; Sustanon® (available in Europe) is suspended in peanut oil. Some patients experience skin reactions to the adhesive in Androderm® (transdermal patch). Compounding pharmacies may be able to provide testosterone cypionate in sesame oil.

Use of transdermal preparations (e.g., Androderm® or Androgel® 1%/Testim®) may be recommended if slower progress is desired, or for ongoing maintenance after desired virilization has been accomplished with intramuscular injection.

Rarely, use a progestin to stop periods if patient only wants a low dose of testosterone, or is having difficulty stopping menses.

Note: Testosterone is not a contraceptive substance; transmen having unprotected sex with fertile males are at risk for pregnancy.

Other meds sometimes prescribed for transmen

- For male-pattern baldness (MPB): finasteride or minoxidil. Caution patients that finasteride will likely slow or decrease secondary hair growth and may slow or decrease clitoromegaly.
- For patients with concerns about too heavy secondary hair growth (e.g., male relatives are excessively hirsute): finasteride, dutasteride.

- For patients with too significantly increased sexual interest: low dose SSRIs.
- For patients who desire greater clitoromegaly: topical testosterone on clitoris (must be subtracted from total dose and patients must be warned that this may hasten Male Pattern Baldness).

Children/Youth

Children/youth (both transgender boys and transgender girls) can be evaluated for GnRH blockers or histrelin implant, but depending on resources, insurance and family desires, cross-sex hormones may be chosen in place of GnRH blockers or histrelin implant for youth 12-13 and up. Individualized treatment is required to meet the physiological and emotional needs of this population. (Grade A)

See section [Youth: Special Considerations](#).



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Identity Documents

Some government agencies require a physician signature to grant new identity documents to applicants whose gender presentation or identity has changed. Physicians may be called upon to affirm that a patient's gender identity and presentation are what the patient declares, or that the patient is under treatment for gender-related issues (declaration form language varies widely). Many states are beginning to adopt forms similar to those used in California, which permit a physician to validate an individual's lived gender. The U.S. State Department issued a policy on June 10, 2010 (revised in January, 2011), stating that surgery is not a necessary prerequisite to changing the gender marker for the issuance of a U.S. Passport.

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Insurance Issues

Electronic Medical Records (EMR)

Patients may wish to be labeled 'Male' or 'Female' according to their gender identity and expression, their legal status, or according to the way they are registered with their insurance carrier. They may wish to be referred to as 'Female' in one situation (e.g., in their record with the physician's office and in personal interactions with the physician and staff), but 'Male' in other situations (e.g., on forms related to their insurance coverage, at work, etc.). This application of terminology could change at any time as individuals come to understand or evaluate their gender.

EMR systems that do not have transgender-specific options make it more difficult for transgender people to change the sex designator under which they will be classified, or such systems may permit a change but will retain a record of that change which will be visible to numerous people outside of the physician or patient's control, leaving transgender and transsexual patients vulnerable to exposure and discrimination. Clinics are encouraged to adopt flexible systems or develop a workaround.

Insurance Issues

Health insurance policies often overtly exclude treatments for transgender or transsexual people's health care needs, even when these needs are not related to a gender transition. Some policies are beginning to offer transgender-inclusive plans where employers (who provide the plans as an employee benefit) have demanded that the carriers do so. Much of the difficulty that transgender people experience with respect to insurance is due to coding systems that provide certain procedures for individuals of one or the other sex. For example, if a transman who is enrolled in the insurance system as a male (which facilitates coverage for his labs that compare results with 'male' values) develops uterine fibroids and requires hysterectomy, the insurance carrier typically denies coverage with the rationale that hysterectomy is only covered for females. Once the carrier labels the patient as transgender or transsexual, many types of coverage may be routinely denied, where they would be covered for patients who are not identified as transgender or transsexual. Physicians or their support staff members may need to interact with insurance claims processors on behalf of their transgender or transsexual patients to insist that medically necessary treatments are covered. In such interactions it will be necessary to support the patient's preferred gender in relationship to the insurance company in the best interests of the patient's health.



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Medical Advisory Board

- [Marvin E. Belzer, MD, FACP, FSAM](#)
- [Jennifer Burnett, MS, MD, FAAFP](#)
- [Maddie Deutsch, MD](#)
- [James Franicevich, NP](#)
- [R. Nick Gorton, MD](#)
- [Jennifer Hastings, MD](#)
- [Dan Karasic, MD](#)
- [Lori Kohler, MD](#)
- [Jennifer Vanderleest MD, MSPH](#)

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Medical Advisory Board

Marvin E. Belzer, MD, FACP, FSAM

Dr. Belzer is an Associate Professor of Clinical Pediatrics and Medicine at the USC Keck School of Medicine. He graduated from medical school at USC in 1986. He completed his internship and residency at UC Irvine in Primary Care Internal Medicine. From there he came to Childrens Hospital Los Angeles in 1989 and completed his fellowship in Adolescent Medicine in 1991.

Since 1991 Dr. Belzer has been the Medical Director of the Risk Reduction Program (provides HIV and transgender care for youth) and became the Associate Director of Research at the Division of Adolescent Medicine in 2005. Dr. Belzer became the Director of Adolescent Medicine in 2010. Dr. Belzer has one of the largest adolescent HIV clinics in the West. He developed a clinical research program that is engaged in large multi-site clinical trials for youth infected with HIV. Dr. Belzer has directed an interdisciplinary adolescent transgender clinic since 1995 and has cared for hundreds of youth aged 12-25.

In addition to providing medical care to children and youth, the program has several HIV prevention programs for at-risk transwomen, provides advocacy through the Los Angeles transgender youth provider network consortia, and has conducted research in HIV risk and prevention as well as the safety of hormonal treatment in youth.

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Jennifer Burnett, MS, MD, FAAFP

Assistant Professor of Community Medicine, UCSF Fresno

Faculty, Fresno Family Practice Residency Program

Board Certified in Family Practice

Fellow, AAFP

Transgender Medicine: Central Valley Family Health-?Selma, CA

Member- WPATH/HBIGDA, IFGE; UCSF Center of Excellence for Transgender Health; Practicing Physician, Selma, CA--Family Medicine with Obstetrics and Transgender Medicine. Presenter at national transgender conferences including IFGE, Esprit, Southern Comfort, Northern California Conference on Transgender Health and Wellness, and WPATH International Symposium, Oslo, Norway, June 2009.

Dr. Burnett was elected as California's 2009 LGBT Delegate to the AAFP's National Congress of Special Constituencies and recipient of the 200 UCSF's Chancellor's Award for LGBT Leadership.

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Medical Advisory Board

Maddie Deutsch, MD

Maddie Deutsch, MD, is one of the nation's leading experts in transgender medicine. Better known to her patients as "Dr. Maddie," she is residency-trained and board-certified in emergency medicine.

She splits her time between Los Angeles and San Francisco, where she continues to practice half-time in the emergency department and has a growing integrative and nutritional medicine practice.

She joined the medical staff of the L.A. Gay and Lesbian Center in 2009 when her private practice outgrew its capacity.

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Medical Advisory Board

James Franicevich, NP

James Franicevich is a family nurse practitioner who has worked in the Transgender Clinic at Tom Waddell Health Center for the past 12 years. He has worked toward incorporating the treatment of gender dysphoria into standard primary care and medicine. He also works at the San Francisco General Hospital Family Health Center.

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Medical Advisory Board

R. Nick Gorton, MD

Nick Gorton is an openly transgender physician. He completed residency and chief residency in Emergency Medicine at Kings County Hospital, Brooklyn, NY. Dr. Gorton has a twice-weekly clinic focusing on transgender patients at the Lyon-Martin Clinic in San Francisco.

He lectures on transgender health care at medical schools and conferences. He has worked as a medical consultant regarding transgender health care for Lambda Legal, the Transgender Law Center, the Northwest Justice Project, the New York Legal Aid Society, and the Sylvia Rivera Law Project.

He is an active member of the American Medical Association GLBT Affairs Committee and the California LGBT Health and Humans Services Network.

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Jennifer Hastings, MD

Jennifer is a Family Practice physician and comes to Transgender Health Care with a passion for creating new and needed services. She was a art teacher and painter before starting medical school, and she is grateful for her varied life experiences before medicine. She started a Transgender Health Care Program in Santa Cruz at the Westside Planned Parenthood in 2005, and her recent projects have been related to increasing access and services for trans youth. She teaches abortion care to UCSF/SF and Natividad residents in San Jose and provides full primary care in Santa Cruz at the community clinic Westside Planned Parenthood.

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Medical Advisory Board

Dan Karasic, MD

Dan Karasic, MD, is Clinical Professor of Psychiatry at UCSF. He is the psychiatrist for the Transgender Life Care Program at Castro Mission Health Center, and sees trans patients in his UCSF faculty practice.

He is a member of Bay Area Gender Associates, a peer supervision group of psychotherapists working with trans people. He edited the book *Sexual and Gender Diagnoses of the Diagnostic and Statistical Manual (DSM): A Reevaluation*, and is a co-author of the Consensus Statement the World Professional Association for Transgender Health on revision of the GID diagnosis.

He is also on WPATH's Standards of Care Workgroup Committee. Dr. Karasic is immediate past president of the Association of Gay and Lesbian Psychiatrists and a Distinguished Fellow of the American Psychiatric Association, and he is actively involved in educating psychiatrists and other health professionals on trans care.

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Medical Advisory Board

Lori Kohler, MD

Lori Kohler, MD is a staff physician for the California Department of Corrections and Rehabilitation and Professor of Family and Community Medicine at UCSF. Dr. Kohler provides education and training on transgender health care throughout the U.S. and internationally. She has cared for hundreds of transgender patients in multiple clinical settings and is the national expert on medical management of transgender prisoners.

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Medical Advisory Board

Jennifer Vanderleest MD, MSPH

Dr. Jennifer Vanderleest is faculty at the University of Arizona College of Medicine. She sees transgender patients in her primary care clinic, and precepts family medicine residents and community-based providers in clinically informed, culturally responsive transgender care.

Her other clinical and research interests include HIV/AIDS primary care, adolescent health, sexual health education for health care providers, and development of social justice-based medical education curricula.

She has presented about transgender health issues at annual meetings of the Association of American Medical Colleges, International Foundation for Gender Education, Society of Teachers of Family Medicine, American Academy of Family Physicians, and the Gay and Lesbian Medical Association.

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Jamison Green is internationally known as a leader in transgender health, policy, law, and education; he has advocated for the health, safety, and civil rights of gender-variant people since 1968. He is the author of the prize-winning book *Becoming a Visible Man* (Vanderbilt University Press, 2004), and led FTM International from March 1991 to August 1999. He has served on the boards of directors of such organizations as the International Foundation for Gender Education, TransYouth Family Allies, Gender Education & Advocacy, Inc., the Transgender Law & Policy Institute, and the World Professional Association for Transgender Health (WPATH). Jamison has appeared in over a dozen educational documentary films, including the award-winning *You Don't Know Dick* and *Transsexual Menace*. His policy work on anti-discrimination legislation, healthcare access, and insurance reform has impacted governments and businesses throughout the world. He has been recognized with numerous awards, including the Association of Gay and Lesbian Psychiatrists' Distinguished Service Award for his contributions to LGBT mental health, the Transgender Advocacy Award from the National LGBT Bar Association, and the Vanguard Award from the Transgender Law Center. I holds a Master of Fine Arts degree in English (Creative Writing) from the University of Oregon (1972) and a PhD in Law (Trans Equalities Law) from the Manchester Metropolitan University (2011). He enjoyed a 30-year career in corporate technical publications in medical, financial processing, and computer design and manufacturing enterprises, and he joined the CoE staff in 2009 to manage the Primary Care Protocols project, and a project emphasizing international trans health guidelines. In 2011 he was voted President-Elect by the members of WPATH; he will serve as President of that Association from 2014-2016.

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Mental Health

As with all patients, the primary care medical provider should screen for psychiatric illness, including substance abuse. Depression is common, and providers should ask about persistent depressed mood, anhedonia, and suicidal ideation, and treat or refer those with clinical depression. Trans people, especially the urban poor, may have suffered harassment or physical trauma. Patients who have experienced trauma should be asked about symptoms of post-traumatic stress disorder, as well as other anxiety disorders. Substance use may occur as avoidance coping in patients with gender dysphoria and/or stressful environments. Referral for psychiatric illness and substance abuse treatment should be to a mental health provider with an understanding of trans care issues.

The patient presenting for initiation of cross-sex hormonal therapy for gender transition may require particular attention. While transition itself often provides great relief from gender dysphoria, it may be a time of heightened environmental stress, presenting challenges with the patient's family, partner, school, and/or place of employment. Referral to a psychotherapist experienced in working with trans people is helpful for many.

The World Professional Association for Transgender Health (WPATH) publishes Standards of Care (SOC) which are periodically updated. These protocols may be reviewed at www.wpath.org. The SOC recommend a mental health evaluation for those starting cross-sex hormonal therapy, and an approach to transition that includes living in the preferred gender role, hormonal therapy, and later, surgery if desired, with mental health assessments for hormonal and surgical therapy, and psychotherapy if deemed necessary by the mental health provider. Some experienced primary care providers feel comfortable initiating cross-sex hormonal therapy for transition based on their own assessment, with referral to mental health only when determined to be necessary. This is of primary importance in settings where mental health services are either not available or not accessible due to financial factors. The primary care provider should assess every patient initiating cross-sex hormonal therapy for ability to understand the risks and benefits of treatment, discuss these with the patient, and consider obtaining a signed consent of this understanding. ([Sample Consent Forms](#))

Some patients may already have been using cross-sex hormones; they may have had them prescribed by a physician (and may be seeking a new physician for whatever reason), or they may have obtained hormones through overseas, "street," or Internet sources, without any prior physician evaluation. In this latter instance, the WPATH SOC has provisions for physicians to continue the medical treatment of patients who have independently initiated cross-sex hormone therapy, regardless of the patient's ability or desire to receive gender-related psychiatric/psychological evaluation. Physicians may provide treatment based upon the principle of Harm Reduction. When patients have demonstrated their determination to continue using medication(s) without physician oversight, then it is usually advisable to assume their medical care and prescribe appropriate hormones. Denying them care will only result in their continued independent treatment, possibly to their detriment.



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Patient Intake

Identifying a transgender patient is easiest if intake forms have a place for transgender patients to safely and confidentially identify themselves to the physician and office staff, and the staff is trained to handle the information respectfully.

The ideal patient intake form has both a "gender question" and an "assigned-sex-at-birth question" such as those shown below, and an optional "preferred pronoun" question. Asking both a gender and a sex question instead of just one (either sex or gender), and offering many choices, allows for specific disclosure of a person's history and also validates their current gender identity. Many trans people do not currently identify as transgender or transsexual for a variety of reasons. Some believe it is part of their past and not a present identification, others may not identify w "trans" terms due to cultural beliefs, social networks, or linguistic norms in various geographic areas.

1. What is your current gender identity? (Check and/or circle ALL that apply)

- Male
- Female
- Transgender Male/Transman/FTM
- Transgender Female/Transwoman/MTF
- Genderqueer
- Additional category (please specify): _____
- Decline to answer

2. What sex were you assigned at birth? (Check one)

- Male
- Female
- Decline to answer

3. What pronouns do you prefer? _____

Transgender patients may reveal themselves to the physician only in the examination room, and then only because they are forced to do so because of their medical history. Physicians will not always be able to recognize a transgender patient without their self-disclosure, but in some cases a physician may discover during an examination that a patient's body does not conform to their self-declared sex, or to the sex the physician expected to find.

Even if surprised, always remain calm and respectful of the person's body and self-declared identity. Patients may not return for follow-up care if they do not feel respected or safe.

Assess patients for immediate health needs, and address illness or medical problems as needed. Verify allergies, past medical history, specialists being seen, chronic and episodic medication usage, including any cross-sex hormone medication and its source (prescription, "street" dealers, sharing with others, etc.), duration of use, any complications. Family history, with special attention to cardiovascular disease, diabetes, and cancer especially of the breast, prostate, or reproductive organs. Psychosocial issues that may be addressed in an initial exam are discussed in the General Prevention and Screening Section. Review health care maintenance, including immunizations, TB screening, safety and safer sex counseling.

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Physical Exam

Physical exams are relevant to the anatomy that is present, rather than the perceived gender of the patient, or the patient's affirmed gender. Always refer to and treat the patient socially as their preferred gender. For example, if breast tissue is present, perform routine breast/chest exams, though if the patient identifies as male, relate to him as a man. In post-operative transwomen, prostate exams are still required. If the uterus and cervix are present in a transgender or transsexual man (transman), pelvic exams and Pap smears may need to be done regularly. These exams must be done with sensitivity toward the patient's affirmed gender: always address a male-identified patient with masculine pronouns and his preferred name, even when undergoing a vaginal exam; always address a female-identified patient with feminine pronouns and her preferred name, even during a prostate exam. Allow transgender patients to specify the gender of their chaperone.

Transgender patients may have extreme discomfort with their bodies, and they may find some elements of a physical exam traumatic. Physician at Vancouver Coastal Health recommend a patient-centered approach:

"Unless there is an immediate medical need, sensitive elements of the exam particularly delay breast, genital and rectal exams until strong clinic patient rapport has developed. Sensitive exams can be managed in a variety of ways, depending on patient preference; some patients prefer the exam to be done as quickly as possible, while others require a slow pace or even slight sedation. Discuss with patients when, where and how you might need to touch them. When the purpose of the exam is explained clearly, most patients will understand."

"You will see a range of development in patients undergoing hormone therapy. Trans men may have beard growth, clitoromegaly, acne, and androgenic alopecia; those who have bound their breasts for numerous years may have rash or yeast infection of the skin under the breasts. Transwomen may have feminine breast shape and size, often with relatively underdeveloped nipples; breasts may appear fibrocystic if there have been silicone injections. Galactorrhea is sometimes seen in Transwomen with high prolactin levels, especially among those using breast pumps to stimulate development. There may be minimal body hair, with variable facial hair (depending on length of time on hormones and manual hair removal treatments such as electrolysis). Testicles may be small and soft; defects or hernias at the external inguinal ring may be present due to practice of "tucking" the testicles up near (or into) the inguinal canal. Particularly in the absence of hormone therapy, findings suggestive of intersex conditions should be further evaluated." (Feldman and Goldberg, pp. 7)

"Physical findings in post-operative patients will depend on the types of surgeries which have been done, the quality of the surgical work, the impact of post-operative complications, and any revisions that have been performed after the initial surgery. Trans men after chest surgery will have scar tissue consistent with the type of procedure, and may have large nipples or small grafted nipples (depending on the technique used). The FTM neophallus created from the release of an augmented clitoris looks like a very small penis (see [images](#)); a grafted penis constructed by phalloplasty (see [images](#)) will be adult-sized but more flaccid than in the natal male [unless a semi-rigid penile prosthesis is implanted]. Transwomen may have undergone breast augmentation with implants. MTF genital surgery typically involves simultaneous removal of the penis/testicles and creation of a neovagina; some patients may just have the testes removed prior to or instead of vaginoplasty. There may be varying degrees of labial reconstruction and clitoral hooding, depending on the completion of surgical revisions. The neovagina typically appears less moist than in natal women, and may be stenosed internally if the patient does not dilate daily or is not sexually active." (Feldman and Goldberg, pp. 7)

Feldman, JL, Goldberg, J. (2006). *Transgender primary medical care: Suggested guidelines for clinicians in British Columbia*. Vancouver, BC: Vancouver Coastal Health, Transgender Health Program.

See section [Surgical Options](#)

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Resources

This section provides educational, and legal, governmental and non-profit organizational resources that providers may refer to in advocating for their transgender patients, as well as for learning more--and helping others learn more--about the lives of, and issues faced by, transgender people.

Educational Resources

- [Center of Excellence for Transgender Health](#), University of California, San Francisco, Department of Family and Community Medicine.
- [World Professional Association for Transgender Health](#) (WPATH)
- [Gender Spectrum](#) (trans youth focus)

Legal and Patient Advocacy Resources

- [Transgender Law and Policy Institute](#)
- [Transgender Law Center](#)
- [National Center for Lesbian Rights](#)
- [National Center for Transgender Equality](#)
- [Lambda Legal](#)

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Sex-Segregated Systems

Restrooms, gyms, changing rooms, etc., all may present obstacles for transgender people in their efforts to integrate in society. In some jurisdictions, transgender people are expressly permitted to use the restroom, etc., that corresponds to their gender identity, and in other jurisdictions there is virtually no opportunity for redress of a grievance should someone prevent or attempt to prevent a transgender person from accessing the facility that is most appropriate, based on their gender identity. Transgender individuals may reasonably be advised to always be mindful of the appropriate etiquette in any setting in order to minimize potential friction. Some non-transgender people often choose to harass transgender people in public settings, and while transgender people should be mindful of their surroundings and do what is necessary to protect themselves, all individuals in a civil society should have a reasonable expectation of safety in public settings and should expect to be free from harassment simply because another person is not comfortable with their gender characteristics. Be aware of the stress and potential conflict that sex-segregated systems present in transgender patients' lives. In clinic areas, making unisex restrooms available so that transgender people do not have to choose or be observed entering what someone else thinks is the 'wrong' restroom will go a long way toward alleviating that stress and eliminating barriers to health care.

Secure Facilities: Primary care physicians may be called upon to treat patients in secure facilities, such as locked hospital wards and other institutionalized settings, including residential treatment facilities, group homes, residential rehabilitation facilities, domiciliaries within the Department of Veterans Affairs, and prisons. Version 6 of the World Professional Association for Transgender Health Standards of Care states:

"Persons who are receiving treatment for gender identity disorders should continue to receive appropriate treatment following these Standards of Care after incarceration. For example, those who are receiving psychotherapy or cross-sex hormonal treatments should be allowed to continue medically necessary treatment to prevent or limit emotional lability, undesired regression of hormonally-induced physical effects and the sense of desperation that may lead to depression, anxiety and suicidality. Prisoners who are subject to rapid withdrawal of cross-sex hormones are particularly at risk for psychiatric symptoms and self-injurious behaviors. Medical monitoring of hormonal treatment as described in these Standards of Care should also be provided. Housing for transgendered prisoners should take into account their transition status and their personal safety." (Meyer, et al. (2001). [Standards of Care for Gender Identity Disorders](#). World Professional Association for Transgender Health.)

Primary care physicians and other care providers in these settings may need to be prepared to advocate for the safety and physical and mental health of transgender and transsexual patients in these environments.



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Surgical Options

This section provides background information on the surgical procedures patients may be considering, or may have already undergone.

Primary care physicians may recommend procedures necessary for a patient's over-all health and well-being, such as a hysterectomy/oophorectomy for a female-to-male patient, or urological consults for a male-to female patient, and to assist patients in understanding surgical options. Primary care physicians need to know how these procedures may impact or be impacted by transsexual surgery.

Primary care physicians may provide post-operative care for patients who have had surgery in another state or country.

Primary care physicians also may be called upon to advocate with insurance carriers or with other specialists for a patient's medical needs.

Male-to-Female Surgeries

Orchiectomy

Orchiectomy--this is the removal of the testes. Some transwomen will have this procedure without a vaginoplasty or penectomy. Estrogen therapy in progress may need to be adjusted post-orchiectomy; orchiectomy may permit lower doses of estrogen therapy and eliminates the need for testosterone blockers.

Vaginoplasty

Vaginoplasty--this is the construction of a vagina to enable female sexual function using penile tissue or a colon graft. The procedure usually involves clitoro-labioplasty to create an erogenously sensitive clitoris and labia minora and majora from surrounding tissues and/or skin grafts, as well as a clitoral hood. Colon grafts do not require dilation and are self-lubricating; however the lubrication is present at all times and may become bothersome. Additionally, colon grafts must be screened for colon cancer and should be monitored if the patient develops inflammatory bowel disease. (See [images](#).)

Penectomy

Penectomy--this is the removal of the penis. This procedure is not commonly done. Generally, penis removal is done in concert with vaginoplasty. In some surgical techniques, the penile skin is used to form the vagina, so this is not a straightforward amputation, but a potentially complex procedure intended to utilize analogous tissue as well as maintain nerve function to preserve sexual responsiveness.

Breast Augmentation

Breast Augmentation--if breast growth stimulated by estrogen is insufficient (only progressing to the 'young adolescent' stage of breast development), augmentation mammoplasty may be medically necessary to ensure that the patient is able to function socially as a woman.

Reduction Thyroidchondroplasty

Reduction Thyroidchondroplasty--this procedure reduces prominent thyroid cartilage.

Voice Surgery

Voice Surgery--this still-evolving procedure is intended to raise the pitch of the speaking voice. Speech therapy is recommended prior to seeking surgical solution.

Facial Feminization

Facial Feminization--includes a variety of aesthetic plastic surgery procedures that modify the proportions of the face to facilitate social function. These procedures are medically necessary.

Female-to-Male Surgeries

Chest reconstruction / bilateral mastectomy

Chest reconstruction / bilateral mastectomy--this is the procedure most frequently required by transmen. A variety of techniques may be used, depending on the amount of the patient's breast tissue. Scarring may result, and nipples may be large or small and grafted, depending on the surgeon's technique. (See [image](#).)

Hysterectomy/oophorectomy

Hysterectomy/oophorectomy--this procedure may be necessary in the event of fibroid growth, endometrial conditions, or as a prophylactic procedure in patients with a family history of cancer. Hysterectomy may be a part of a phalloplasty/vaginectomy procedure when the vaginal tissue is used to construct the urethral canal.

Metoidioplasty

Metoidioplasty--the construction of male-appearing genitalia employing the testosterone-enlarged clitoris as the erectile phallus. The phallus generally will be small and has the appearance of an adolescent penis, but erectile tissue and sensation are preserved. This procedure releases the clitoral hood, sometimes releasing the suspension ligaments to increase organ length, may involve raising the position of the organ a centimeter or so toward the anterior, and may include scrotoplasty and (less frequently) urethroplasty. Closure of the vaginal opening may be full or partial, or the vaginal opening may not be impacted at all, depending on the surgeon's technique. This procedure is much less invasive than a phalloplasty procedure, and emphasizes preservation of erotic sensation. (See [images](#).)

Phalloplasty

Phalloplasty--the construction of a phallus that more closely approximates the size of an erect male organ, using tissue from another part of the patient's body. Size and appearance are prioritized over erectile capacity, and in some cases over erotic sensation. Skin flaps used in this procedure include abdominal flap (no erotic sensation), radial forearm flap, deltoid flap, and calf flap (all of which contain nerves that may be grafted to the pudendal nerve to provide erotic sensation). Erectile capacity is provided via implanted semi-rigid or inflatable penile prostheses. (See [images](#).)

Scrotoplasty

Scrotoplasty--the construction of a scrotum, usually using labia majora tissue and saline or silicone testicular implants. Some surgeons will use tissue expanders and place the implants after the tissue has been stretched sufficiently to accommodate the implants. This procedure is rarely done separately, but is usually performed in conjunction with either a metoidioplasty or a phalloplasty procedure, and with some phalloplasty/urethral extension techniques it may be necessary to perform the scrotoplasty as a later stage, after urethral healing.

Urethroplasty

Urethroplasty--the creation of the urethral canal through the neophallus to facilitate standing micturition. This is usually, but not always, done in conjunction with genital reconstruction. Some transmen will avoid this procedure due to the potential for complications, or their genital plastic surgeon may not be willing or able to perform this procedure, either as a matter of general practice, or specific to the patient's body habitus.

Vaginectomy

Vaginectomy--the removal of the vagina may be done with ablative technique or surgical techniques. This is required if the vaginal opening is going to be closed.



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Vaginoplasties



Vaginoplasty #1, 3 years post-op



Vaginoplasty #2, 3 years post-op



Vaginoplasty #3, 3 years post-op



Vaginoplasty #4, 1-3 months post-op



Vaginoplasty #5, 1-3 months post-op



Vaginoplasty #6, 1-3 months post-op



Vaginoplasty #7, 1-3 months post-op



Vaginoplasty #8, 1-3 months post-op



Vaginoplasty #9, 1-3 months post-op



Vaginoplasty #10, 1-3 months post-op

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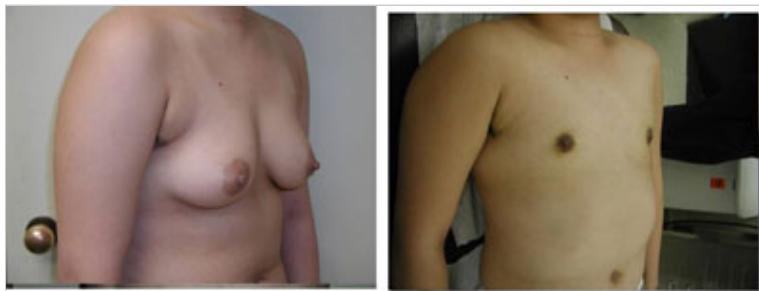
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Chest reconstruction



Chest reconstruction: before and after

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Metoidioplasty and testicular implants



Metoidioplasty and testicular implants #1



Testicular implants #1

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Phalloplasty



Phalloplasty #1



Phalloplasty #2



Phalloplasty #3



Phalloplasty #4 demonstrating urination

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Transgender Terminology

It is important to understand that not all people who might fall into this category from an outsider's perspective identify as transgender, nor will they all use this terminology to describe themselves. When interacting with this population, it is crucial to avoid seeking or attaching labels to persons whom those labels are not appropriate or comfortable.

Note: Always ASK patients how they define themselves, and respect and USE their preferred self-definitions and pronouns appropriate to their gender identity.

Transgender-related terminology includes (but is not limited to):

- **Female-to-Male (FTM):** describes the trajectory of a person who is changing or has changed their body and lived gender role from a birth-assigned female to an affirmed male. Also, trans male, trans man, or transman.
- **Gender Identity:** the sense of one's self as male or female.
- **Gender presentation:** the expression of gender. People may present or express gender in a variety of ways that may or may not correspond with their gender identity. If a person says they are transgender, the gender they are expressing through their dress, hairstyle, mannerisms, or other behaviors may or may not correspond to the gender an observer might perceive through their presentation. Most people who are NOT transgender dress and comport themselves in ways that reinforce their gender identity. Transgender people usually do the same, but often they are unable to do so without social and/or medical support, so the first time (or first several times) they are encountered, particularly if they are pre-transition, they may be presenting their gender as they believe they are expected by others to present, rather than as they would feel most comfortable, or as they would if they felt they were free or otherwise able to express their gender identity.
- **Genderqueer:** one who defies or does not accept stereotypical gender roles and may choose to live outside expected gender norms. Genderqueer people may or may not avail themselves of hormonal or surgical treatments.
- **Male-to-Female (MTF):** describes the trajectory of a person who is changing or has changed their body and lived gender role from a birth-assigned male to an affirmed female. Also, trans woman or transwoman.
- **Trans:** shorthand term for a variety of transgender identities. Also, trans people or transpeople. Avoid using this term as a noun: a person is not "a trans"; they may be a trans person.
- **Transgender:** literally "across gender"; sometimes interpreted as "beyond gender"; a community-based term that describes a wide variety of cross-gender behaviors and identities. This is not a diagnostic term, and does not imply a medical or psychological condition. Avoid using this term as a noun: a person is not "a transgender"; they may be a transgender person.
- **Tranny / transie:** slang terms for transgender or transsexual. Some people find these highly offensive, while others may be comfortable with them as a self-reference, but consider them derogatory if used by outsiders. It is recommended that health care providers avoid using these terms when speaking with or about transgender patients.
- **Transsexual:** a medical term applied to individuals who seek hormonal (and often, but not always) surgical treatment to modify their bodies; they may live full time as members of the sex category opposite to their birth-assigned sex (including legal status). Some individuals who have completed their medical transition prefer not to use this term as a self-referent. Avoid using this term as a noun: a person is not "a transsexual"; they may be a transsexual person.

- **Transvestite:** a psychiatric term applied to male-bodied people who wear female clothing, periodically, episodically, for sexual gratification, and may experience significant distress. Some people who crossdress will use this term as a self-referent, but others reject its potentially stigmatizing psychiatric/diagnostic meaning, or use the term crossdresser in its place because they do not dress for sexual gratification or feel distress about the behavior.
- **Transition:** a term meaning the period of time when a transgender or transsexual person is learning how to cross-live socially as a member of the sex category opposite their birth-assigned sex, or is engaged in early hormone use. Some people use this term to describe their medical condition with regard to their gender until they have completed the medical procedures that are relevant for them.

Note: Patients may wish to be labelled 'Male' or 'Female' according to their gender identity and presentation, their legal status, or according to the way they are registered with their insurance carrier. They may wish to be referred to as 'Female' in one situation (e.g., in their record with the physician's office and in personal interactions with physician and office staff), but 'Male' in other situations (e.g., on forms related to their insurance coverage, lab work, etc.). The application of specific terminology could change at various times over the patient's lifetime. This principle cannot be over-emphasized: Always ASK patients how they define themselves, and respect and USE their preferred self-definitions.

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Youth: Special Considerations

See children under 18 with their parents or guardians for treatment, not for assessment. With pre-pubertal children, the primary focus is on providing parental support and education so that a safe environment is developed for the child, and the parents and child know what the treatment options are once puberty begins.

The first visit usually involves getting a complete medical history, reviewing treatment options with the patient or the family, answering all questions and doing some baseline laboratory work. Physical exam is deferred to a second or later visit as per the patient's wishes, but is required prior to prescribing of any medication. Social transition, in and of itself (without physical intervention), is possible, and may alleviate dysphoria, at least until puberty.

Youth under 18 are strongly advised to see a mental health professional experienced in transgender issues prior to cross-sex hormone treatment to ensure readiness to transition. Before initiating hormonal therapy with youth over 18, the primary care provider should encourage them to consult a qualified mental health professional to assist them in exploring the ramifications of gender transition, potential complications, etc.

Lack of access to mental health care should not preclude or restrict access to care when indications are favorable that transition will be well-tolerated and socially supported.

If a youth has not completed development (i.e., Tanner V), strong consideration should be given to consulting (provider-to-provider) with an expert in transgender medicine.

FAQ: frequently asked questions regarding youth, with answers from physicians at Children's Hospital Los Angeles

Is this just a phase?

This is probably the number one thing that parents and, frankly, providers will ask about. If we are to move forward with medical intervention, we want to be sure this isn't just a phase. Here's what the limited research shows: most gender variant natal boys will go on to be gay adolescents and adults, and unpublished data reveals 50% of gender variant natal girls will go on to become transgender adolescent and adult men. This data does not particularly distinguish those children who have a persistent and consistent transgender identity. What that means is that we currently have no predictors whatsoever in the research world to understand or inform the trajectory of each gender variant child. However, what the research also shows is that adolescents who present with gender variance, or a transgender identity go on to be transgender older adolescents and adults 100% of the time. Again, the data is small, but supports the notion that gender constancy is certainly in place in adolescence. The data about children (the only data available right now) is one of the main reasons that we advocate the use of GnRH analogues. Their use operates from the assumption that we are allowing those kids in the "grey zone" of early puberty to establish gender constancy. However, one of the flaws in this thinking is this: we assume that gender constancy is set in place in adolescence, and not earlier, how do we know then that the presence of pubertal hormones is not playing a role in that process? Therefore, are we not blocking that process from moving forward by providing hormone blockers? Personally, I don't believe that gender constancy is established in adolescence, I think one is born with their gender, and that it is the confusing messages from the society around an individual with a discordant body/identity that causes the question of gender constancy to arise. Anyway, the answer to how do I know this isn't just a phase is that we don't 100% know, but it is pretty clear both from the limited data and the anecdotal experience of those who work with trans youth that adolescents don't "remit" with regard to their gender identity. Where we choose to draw the age line with regard to adolescence is also interesting, and is precisely why I call this time frame the Grey Zone. It is this question that drives us to recommending the use of GnRH analogues.

of GnRH analogues in early puberty so that we (providers and parents) can feel more comfortable with the trans identity being permanent, and r just a phase. GnRH analogues are completely reversible, and therefore do not lead to any permanent physiologic effects.

How will treatment impact future fertility?

Ideal treatment for transgender youth is to get them onto cross sex hormones prior to the development of unwanted secondary sexual characteristics. Regardless of whether blockers are used or not, the use of prolonged cross sex hormones will make biological children very unlikely for transgender youth in the future. I say very unlikely, not impossible, because there are lots of trans folks who have stopped cross sex hormones and proceeded with the procreation process, but again, I am not familiar with each circumstance. If we treat correctly however, we would aim to feminize trans females early, and prior to the development of viable sperm. In trans males, the prolonged use of testosterone will likely render these men infertile over time. There is no data examining the length of time on cross sex hormones that solidifies infertility either for transmen or transwomen. With regard to hormone blockers, should an individual come off blockers and proceed with biologic puberty, they would still be as fertile as they would have been without blockers. There are no studies that show infertility as a side effect to GnRH analogues when used in children with central precocious puberty, which is the population most similar to our trans kids on blockers.

Under what circumstances would GnRH treatment be appropriate?

Pubertal suppression would be appropriate (with parental/guardian informed consent) for those patients who have had a persistent and consistent cross sex identity from childhood who are entering puberty and have reached Tanner Stage 2. Occasionally, there may be patients who desire halting their pubertal trajectory who are further along in their development. For these patients, GnRH analogues may be useful, but it is important to note that side effects are more common when a person already has circulating adult levels of sex hormones.

How is GnRH prescribed?

GnRH is prescribed similarly to those pediatric patients with central precocious puberty (CPP). It is either delivered via monthly injection, or via a implant that can remain in for 12 months, or sometimes longer. Pubertal suppression is generally achieved with 7.5 mg of leuprolide acetate monthly.

Under what circumstances is bone age testing useful?

Patients who are on hormone blockers for central precocious puberty are often on medication for several years, and while bone mineral density has been shown to be diminished while patients are on GnRH analogues, peak bone masses are not diminished compared to controls after treatment is complete, and normal puberty is resumed. There are no large studies on the effect of hormone blockers on bone mineral density in transgender youth population who are generally started at later ages and treated for shorter time periods. Extrapolating from the CPP experience, it is likely that peak bone mineral density would not be affected in transgender youth on GnRH analogues, but research is needed to confirm this assumption. Patients with conditions that predispose them to poor bone density, i.e., osteogenesis imperfecta, anorexia, neuromuscular disease, Vitamin D deficiency, and prolonged immobilization, etc., may not be good candidates for pubertal suppression with GnRH analogues. Endocrine Society Guidelines recommend annual bone density but if cost is an issue, GnRH analogues could be used without this test.

Is it possible to override insurance exclusions?

If insurance policies specifically exclude care for GID, transgender services or other equally specific diagnoses, it is difficult to get those plans to cover GnRH analogues. However, it is always worth attempting to advocate for these medications based on the "medical necessity" model. Providers can supply insurance companies with copies of the clinical practice guidelines [Endocrine Treatment of Transsexual Persons](#) from the Endocrine Society, or other scientific publications that corroborate the necessity for early treatment in transgender adolescents. More often, insurance companies will require providers to obtain prior authorization for specialized medications like injectables or implants, in which case they usually will cover them after being provided with the appropriate paperwork and supporting documentation.