



Caring for the transgender patient: The role of the gynecologist

Solution Gynecologists must become comfortable with and educated about transgender men's unique health care needs and issues, starting with the gender dysphoria associated with the gynecologic visit and examination

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CASE Transgender man consults gynecologist for fertility options

A 36-year-old transgender man considering the possibility of having his own biological children presents to the gynecology office to discuss hysterectomy as gender dysphoria treatment as well as his fertility preservation options. He has never had a gynecologic examination. Since age 24, he has been on testosterone therapy. Although his menses initially ceased, each month over the past 2 years he has had breakthrough spotting lasting 2 to 4 days, sometimes accompanied by pelvic pain and cramping. These symptoms have caused him distress and anxiety, which have led to his missing work 1 to 3 days each month. On presentation, he appears anxious and makes little eye contact. His girlfriend of 6 years has come in with him and is very supportive.



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ver the past decade, transgender health care has moved to the fore-front of the medical conversation. At many prominent medical centers across the United States, clinicians are forming multi-disciplinary teams to help improve the health care of this patient population. Outcomes are being studied, and the literature is becoming more robust.

People tend to think of transgender women—male-assigned persons who self-identify as female—as the typical prototype for transgender people, but this focus is skewed in both society and the medical community. Transgender men—female-assigned persons who self-identify as male—remain underrepresented, mostly because they want to stay "under the radar," especially with respect to medical care and, more specifically, routine gynecologic care.

Although the transgender woman has unique health needs and may present to a gynecologist for care after gender-affirmation surgery, the transgender man's many health care needs and their subtleties can be addressed only by a gynecologist. In this article, I review these intricacies of care to help increase clinician comfort in treating these patients.



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Making transgender patients feel comfortable in the office

Taking small steps to create an inclusive office environment will help transgender men feel less anxious, discriminated against, and threatened when seeking gynecologic services—resulting in a stronger patient—physician relationship.

Clinicians can take steps to:

- ensure all patients have the correct identifiers in their medical records
- provide staff with the proper education and diversity training
- instruct staff in proper use of pronouns
- set up unisex or gender-nonbinary restrooms with appropriate signage
- make the decor gender nonspecific.

Beth Cronin, MD, a practicing general gynecologist in Providence, Rhode Island, says that you also should consider a general sign, placed in a highly visible area, that represents your nondiscrimination policy. The AMA offers this wording: "This office appreciates the diversity of human beings and does not discriminate based on race, age, religion, ability, marital status, sexual orientation, sex or gender identity." She also recommends having education and marketing materials with affirmative imagery and content and providing educational brochures on transgender health topics.

Why transgender patients may delay seeking health care

Transgender patients remain underserved because of the health care barriers they encounter. Factors contributing to poor access include lack of health insurance, inability to pay for services, clinician insensitivity and hostility, and fear of exposure of transgender status during health care encounters.¹ In a recent large survey study, 30% of transgender respondents indicated that they delayed or did not seek medical care as a result of discrimination, and those who had needed to teach their clinicians about transgenderism were 4 times more likely to postpone or not seek care.²

In a 2015 survey of ObGyns' current knowledge and practice regarding LGBT (lesbian, gay, bisexual, transgender) care, only one-third of respondents indicated they were comfortable caring for transgender patients.³ In addition, only one-third indicated being knowledgeable about the steps transgender patients must take to transition to their self-

identified gender, and less than half were familiar with the recommendations for the routine health maintenance and screening of these patients.

Much of this discomfort derives from the lack of incorporation of LGBT-specific topics in medical curricula. In 2011, Obedin-Maliver and colleagues found that, at 176 US and Canadian allopathic and osteopathic medical schools, the median time dedicated to LGBT health care needs and related topics was unsatisfactory.4 This deficiency is slowly being reduced with changes in the curricula of many health care specialties. In ObGyn residency programs, for example, transgenderspecific questions have been added to annual in-service examinations. The hope is that, as education initiatives improve, clinicians will become more comfortable caring for genderminority patients, who with improved access to care will no longer need to seek subspecialists in transgender services.

Considerations for the gynecologic visit and examination

Transgender men visit the gynecology office for many reasons, including routine gynecologic care and health maintenance, care for acute and chronic gynecologic conditions (abnormal bleeding, pelvic pain, vaginitis), evaluation and management of pelvic floor disorders, consultation on hysterectomy for gender transition, and fertility counseling.

However, transgender men who reach their third, fourth, or fifth decade without having had a pelvic examination cite many reasons for avoiding the gynecology office. Most commonly, gynecologic visits and genital examination can severely exacerbate these patients' gender dysphoria. In addition, many patients who do not engage in penetrative vaginal sex think their health risks are so low that they can forgo or delay pelvic exams. Patients who have stopped menstruating while on testosterone therapy may think there is no need for routine gynecologic care. Other reasons for avoiding pelvic exams are pain and traumatic sexual memories.⁵

Transgender men need to receive the regular guideline-recommended exams and screenings used for cisgender women. (Cisgender refers to a person whose sense of gender identity corresponds with their birth sex.) We need to educate patients in this regard and to discuss several issues before performing an examination. First, take a thorough history and avoid making assumptions about sexual orientation and sex practices. Some patients have penetrative vaginal intercourse with either men or women. For some patients, the exam may cause dysphoria symptoms, and we need to validate patients' fears. Discussing these issues ahead of time helps patients get used to the idea of undergoing an exam and assures them that the clinician is experienced in performing these exams for transgender men. In my practice, we explain the exam's purpose (screening or diagnosis) and importance. We also counsel patients that they may experience some normal, and temporary, spotting after the exam. For those who experience severe dysphoria with vaginal bleeding of any kind, we acknowledge that postexam spotting may cause some anxiety. Patients with severe anxiety before the exam may be premedicated with an anxiolytic agent as long as someone can transport them to and from the office.

The bimanual exam should be performed with care and efficiency and with the patient given as much control as possible. In most cases, we ask patients to undress only from the waist down, and their genitals stay covered. Patients uncomfortable in stirrups are asked to show us the position that suits them best, and we try to accommodate them. Although speed is a goal, remember that many patients are nulliparous, have had limited or no vaginal penetration, or are on testosterone and have significant vaginal dryness. Use the smallest speculum possible, a pediatric or long and narrow adult speculum, and apply lubricant copiously. Preexam application of topical lidocaine jelly to the introitus can help reduce pain. To help a patient relax the pelvic floor muscles and habituate to the presence of a foreign object in the vagina, start the exam by inserting a single digit. In addition, ask the patient about speculum placement inside the vagina: Does he want to place the speculum himself or guide the clinician's hand? Open the speculum only as much as needed to adequately visualize the cervix and then remove it with care.

Managing benign gynecologic disorders

The same algorithms are used to evaluate abnormal bleeding in all patients, but the differential diagnosis expands for those on testosterone therapy. Testosterone may no longer be suppressing their cycles, and abnormal bleeding could simply be the return of menses, which would present as regular cyclic bleeding. Increasing the testosterone dosing or changing the testosterone formulation may help, and the gynecologist should discuss these options with the patient's prescribing clinician. In addition, progesterone in any form (for example, medroxyprogesterone acetate 5 to 30 mg daily) can be added to testosterone regimens to help suppress menses. The levonorgestrel-releasing intrauterine device (LNG-IUD) can be very effective, but placement can induce anxiety, and some patients decline this treatment option.

In patients with intermenstrual spotting, assess the vagina for atrophy. Both overthe-counter vaginal moisturizers and DHEA (dehydroepiandrosterone) suppositories (1% compounded) can help treat atrophy, but not all patients are comfortable using them. Most patients decline vaginal estrogen products for symptomatic vaginal atrophy even though the systemic effects are minimal.

The historic literature suggests that female-to-male patients' long-term exposure to androgens leads to atrophic changes in the endometrium and myometrium, and clinical studies of menopausal women who take exogenous androgens have confirmed this effect.6 However, new data point to a different histologic scenario. A recent study found a possible association between longterm testosterone use in transgender men



For transgender patients taking testosterone, over-the-counter vaginal moisturizers and DHEA suppositories can help treat intermenstrual spotting due to vaginal atrophy, but not all patients are comfortable using these treatments

of reproductive age and a low proliferative active endometrium, as well as hypertrophic changes in the myometrium.7 The causes may be peripheral aromatization of androgens and expression and up-regulation of androgen receptors within the endometrial stroma and myometrial cells.8 Given these emerging data and anecdotal cases reported by clinicians who perform hysterectomies for transgender men, imaging and tissue sampling should be used to evaluate abnormal uterine bleeding, particularly in patients previously amenorrheic on testosterone. Be aware that transvaginal ultrasound or endometrial biopsy are challenging procedures for these patients. Counsel patients to ensure that they adhere to follow-up.

The ongoing need for cervical cancer screening

The concept of "original gender surveillance" was presented in a 2-case series of transgender men with uterine and cervical cancer that might have been detected earlier with better screening and routine care. There is no evidence, however, that long-term high-dose androgen therapy causes endometrial or cervical cancer, and the data on endometrial cancer in patients on cross-sex hormone therapy are limited such that a causal relationship between testosterone and these malignancies cannot be established.

The rate of unsatisfactory Pap smears is higher in transgender men than in cisgender women. The difference was anecdotally noted by clinicians who routinely cared for transgender patients over time and was confirmed with a retrospective chart review.¹⁵

Peitzmeier and colleagues reviewed the records of 233 transgender men and 3,625 cisgender women with Pap tests performed at an urban community health center over 6 years. 15 The transgender cohort, with its prevalence rate of 10%, was 10 times more likely to have an unsatisfactory or inadequate Pap smear. Moreover, the transgender patients were more likely to have longer latency to follow-up for a repeat Pap test. In addition, testosterone therapy was

more likely associated with inadequate Pap smears, and time on testosterone therapy was associated with higher odds of Pap smear inadequacy. Besides the exogenous hormone therapy, clinician comfort level and experience may have contributed to the high prevalence of inadequate Pap smears.

As mentioned earlier, it is important to become comfortable performing pelvic exams for transgender men and to prepare patients for the possibility that a Pap smear might be inadequate, making a follow-up visit and repeat Pap test necessary.¹⁶

Consultation for hysterectomy: Perioperative considerations

Transgender men may undergo hysterectomy, oophorectomy, and/or vaginectomy. The **TABLE** summarizes the indications and perioperative considerations for each procedure.

Some transgender men undergo hysterectomy for benign gynecologic disease. Counseling and perioperative planning are the same for these patients as for cisgender women, although some of the considerations discussed here remain important.

Other patients undergo hysterectomy as part of transitioning to their self-affirmed gender. The World Professional Association for Transgender Health (WPATH) Standards of Care should be used to guide counseling and treatment.¹⁷ These guidelines were designed as a framework for performing hysterectomy and other gender-affirming procedures. According to the WPATH standards, the criteria for hysterectomy and oophorectomy are:

- 2 referral letters from qualified mental health professionals
- well-documented persistent gender dysphoria
- capacity to make fully informed decisions and to consent to treatment
- age of majority in given country
- good control of any concurrent medical or mental health concerns, and
- hormone therapy for 12 continuous months, as appropriate to gender goals, unless the patient has a medical contrain-



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TABLE Surgical treatment options: Indications and perioperative considerations

		Perioperative considerations
Hysterectomy	Benign gynecologic disease	Counseling and perioperative planning same as for cisgender women
	Transition to self- affirmed gender	WPATH Standards of Care criteria (not applicable to indications other than gender dysphoria):
		 2 referral letters from qualified mental health professionals
		well-documented persistent gender dysphoria
		 capacity to make fully informed decisions and to consent to treatment
		age of majority in given country
		 good control of any concurrent medical or mental health concerns
		 hormone therapy for 12 continuous months, as appropriate to gender goals, unless patient has medical contraindication or is otherwise unable or unwilling to take hormones
		 Most are performed laparoscopically, although ACOG recommends vaginal hysterectomy for limiting complications and morbidity and maximizing cost- effectiveness
		Can be performed concurrently with oophorectomy or vaginectomy
Oophorectomy	Transition to self- affirmed gender	WPATH Standards of Care criteria as described for hysterectomy
		Concurrent with hysterectomy is a topic of debate
		Effect on fertility is a concern; candidates are as follows:
		hysterectomy: patients want to become parent but do not want to carry child
		(current or future partner or surrogate will carry)
		oophorectomy: patients do not want genetic child
		 oophorectomy concurrent with hysterectomy: patients do not want to preserve fertility (or have already ended it) and meet WPATH criteria for surgery
		undecided: isolated hysterectomy with subsequent staged oophorectomy
	Pain caused by ovarian cysts	Concurrent oophorectomy and hysterectomy
		Thorough counseling on risks and benefits
Vaginectomy	Severe gender dysphoria	No standard of care
		Transvaginal or abdominal (open, laparoscopic, robotic)
		Surgeons must be experienced in the procedure
		Genital reconstruction considerations
Vaginal cuff closure	Vaginal cuff evisceration	Close vaginal cuff in 2 layers using at least 1 layer of delayed absorbable suture
		No guidance on stopping or continuing testosterone therapy perioperatively
		Counsel patients that severe mood swings and malaise may occur after testosterone therapy is stopped

Abbreviations: ACOG, American College of Obstetricians and Gynecologists; WPATH, World Professional Association for Transgender Health.

dication or is otherwise unable or unwilling to take hormones.

As the guidelines emphasize, these criteria do not apply to patients undergoing either procedure for medical indications other than gender dysphoria.

Hysterectomy approach. Most surgeons

perform gender-affirming hysterectomies laparoscopically. Many clinicians hesitate to perform these hysterectomies vaginally, as the patients are often nulliparous. In general, the best operative route is the one the surgeon feels most comfortable performing safely and efficiently. For a nulliparous patient with minimal pelvic organ descensus and a narrow pelvis, the laparoscopic approach is reasonable. A recent study in a small cohort of transgender men found that vaginal hysterectomy was successful in only 1 in 4 patients. Nevertheless, the American College of Obstetricians and Gynecologists (ACOG) recommends vaginal hysterectomy, when appropriate, for limiting complications and morbidity while maximizing cost-effectiveness. Although data are limited, vaginal hysterectomy seems feasible and should be considered in a subset of patients who present for gender-affirming hysterectomy.

The oophorectomy debate

Oophorectomy concurrent with hysterectomy remains a topic of debate among gynecologists who perform hysterectomy for gender transition. Some clinicians think gonadectomy poses a significant risk for bone health compromise at an early age. The long-term effects of testosterone on bone have not been well studied. Although bone metabolism is thought to increase over the short term, there are no major changes in bone density over the long term. In fact, in the setting of longterm testosterone therapy, cortical bone was found to be larger in transgender men than in cisgender women.20 The issue is for patients who stop taking exogenous testosterone after oophorectomy. This subset of patients has not been well studied but clearly needs bone health surveillance and supplementation.

Another concern about oophorectomy is its effect on fertility. Because it is important to discuss fertility-preserving options, during consultation for a hysterectomy I spend a large portion of time addressing fertility goals. Patients who want to become a parent but do not want to carry a child (they want a current or future partner or surrogate to carry) are candidates for hysterectomy; those who do not want a genetic child are candidates for oophorectomy; and those who do not want to preserve their fertility (or have already ended it) and who meet the WPATH criteria for surgery are candidates for oophorectomy concurrent with hysterectomy. The discussion can be particularly challenging

with young transgender men, since their ability to project their family planning goals may be compromised by their gender dysphoria. Clinicians can counsel patients about another option: isolated hysterectomy with subsequent staged oophorectomy.

Similar to cisgender women with polycystic ovary syndrome, transgender men on exogenous testosterone therapy are at risk for ovarian cysts,⁷ which can cause pain and should be evaluated and managed. As mentioned, these patients may find it difficult to visit a gynecologist and tolerate a vaginal examination, and many fear presenting to an emergency room, as they will need to disclose their transgender status and risk being discriminated against or, worse, not being triaged or cared for properly. Patients should be thoroughly counseled about the risks and benefits of having oophorectomy performed concurrently with hysterectomy.

The question of vaginectomy

Patients and clinicians often ask about concurrent vaginectomy procedures. In some cases, patients with severe gender dysphoria and absence of penetrative vaginal activity request excision or obliteration of the vagina. There is no standard of care, however. Vaginectomy can be done transvaginally or abdominally: open, laparoscopically, or robotically. It therefore should be performed by surgeons experienced in the procedure. Patients should be advised that a portion of the vaginal epithelium is sometimes used for certain phalloplasty procedures and that, if they are considering genital reconstruction in the future, it may be beneficial to preserve the vagina until that time.

There are no guidelines on stopping or continuing testosterone therapy perioperatively. Some clinicians are concerned about possible venous thromboembolic events related to perioperative use of testosterone, but there are no data supporting increased risk. The risk of postoperative vaginal cuff bleeding in patients on and off testosterone has not been well studied. Since patients who stop taking testosterone may develop severe mood swings and malaise, they should be



Concerns regarding oophorectomy concurrent with hysterectomy include its effects on bone health and fertility

counseled on recognizing and managing such changes. There are also no data on the risk of vaginal cuff dehiscence in this patient population. Testosterone usually causes the vagina to become very atrophic, so proper closure should be ensured to avoid cuff evisceration. In my practice, the vaginal cuff is closed in 2 layers using at least 1 layer of delayed absorbable suture.

Addressing fertility, contraception, and obstetric care

Most transgender men are able to conceive a child.²¹ Data in this area, however, are sparse. Most of the literature on reproductive health in this patient population is focused on human immunodeficiency virus (HIV) and other sexually transmitted infections.22 Nevertheless, patient-physician dialogue on fertility and reproductive health has increased since more patients started seeking surgical transition services (likely a result of improved coverage for these surgeries). In addition, we are learning more about patients' ability and desire to conceive after long-term use of cross-sex hormone therapy. The importance of this dialogue is becoming apparent. One survey study found that more than half of the transgender men who had undergone affirmation surgery wanted to become parents.²³

Before initiating cross-sex hormone therapy or before undergoing hysterectomy and/or oophorectomy, patients must be counseled about their fertility options. Testosterone may affect fertility and fecundity, but there are case reports of successful pregnancy after discontinuation of testosterone.21 Reproductive endocrinology and fertility specialists have begun to recognize the importance of fertility preservation in this patient population and to apply the principles of oncofertility care beyond patients with cancer. In a 2015 opinion paper on access to fertility services by transgender persons, the Ethics Committee of the American Society for Reproductive Medicine focused on this population's unique fertility needs.24 Currently, oocyte and embryo cryopreservation are options for transgender men planning to start cross-sex hormones or undergo surgery.²⁵ Other methods being investigated may become options in the future.²⁵

There are even fewer data on transgender men's contraceptive needs. Many clinicians mistakenly think these patients are at low risk for pregnancy. Some patients have male partners and engage in penetrative penile-vaginal intercourse; others are not on testosterone therapy; and still others, despite taking testosterone, are not always amenorrheic and may be ovulating. In a small cross-sectional study, Light and colleagues found that 12% of transgender men who were surveyed after conceiving had been amenorrheic on testosterone therapy, and 24% of these pregnancies were not planned.²¹

In a study by Cipres and colleagues, half of the 26 transgender men were considered at risk for pregnancy: These patients still had a uterus, not all were on testosterone, not all on testosterone were amenorrheic, they were having vaginal intercourse with cisgender men, and none were using condoms or other contraception.26 The authors noted several potential underlying reasons for poor counseling on contraceptive needs: patients feel stigmatized, clinicians assume these patients are not candidates for "female" hormone therapy, patients fear these modalities may feminize them and compromise their affirmed identities, patients poorly understand how testosterone works and have mistaken ideas about its contraceptive properties, and clinician discomfort with broaching fertility and reproductive health discussions.

Data are also limited on pregnancy in transgender men. We do know that clinicians are not well equipped to help patients during the peripartum period and better resources are needed.²¹ Gender dysphoria can worsen during and immediately after pregnancy, and patients may be at significant risk for postpartum depression. More research is needed.

Gynecologists play key role in transgender care

Transgender men's unique health care needs can be addressed only by gynecologists.



Contraceptive counseling is important, since some transgender men have male partners and have intercourse, others are not on testosterone, and others may be ovulating despite taking testosterone

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It is important to become comfortable with and educated about these needs and their subtleties. This starts with understanding transgender patients' gender dysphoria associated with the gynecologic visit and examination. Learning more about these patients and their needs will improve health care delivery. ②

References

- Xavier JM, Simmons R. The Washington Transgender Needs Assessment Survey, 2000. http://www.glaa.org/archive/2000/tgneedsassessment1112.shtml. Accessed January 2, 2017.
- Jaffee KD, Shires DA, Stroumsa D. Discrimination and delayed health care among transgender women and men: implications for improving medical education and health care delivery. Med Care. 2016;54(11):1010-1016.
- Unger CA. Care of the transgender patient: a survey of gynecologists' current knowledge and practice. J Womens Health. 2015;24(2):114–118.
- Obedin-Maliver J, Goldsmith ES, Stewart L, et al. Lesbian, gay, bisexual, and transgender-related content in undergraduate medical education. JAMA. 2011;306(9):971–977.
- Feldman J. Medical and surgical management of the transgender patient: what the primary care clinician needs to know. In: Makadon H, Mayer K, Potter J, Goldhammer H, eds. Fenway Guide to Lesbian, Gay, Bisexual, and Transgender Health. Philadelphia, PA: American College of Physicians; 2008:365–392.
- Hickok LR, Toomey C, Speroff L. A comparison of esterified estrogens with and without methyltestosterone: effects on endometrial histology and serum lipoproteins in postmenopausal women. Obstet Gynecol. 1993;82(6):919– 924.
- Loverro G, Resta L, Dellino M, et al. Uterine and ovarian changes during testosterone administration in young female-to-male transsexuals. Taiwan J Obstet Gynecol. 2016;55(5):686-691.
- Mertens HJ, Heineman MJ, Koudstaal J, Theunissen P, Evers JL. Androgen receptor content in human endometrium. Eur J Obstet Gynecol Reprod Biol. 1996;70(1):11–13.
- Urban RR, Teng NN, Kapp DS. Gynecologic malignancies in female-to-male transgender patients: the need of original gender surveillance. Am J Obstet Gynecol. 2011;204(5):e9-
- Mueller A, Gooren L. Hormone-related tumors in transsexuals receiving treatment with cross-sex hormones. Eur J Endocrinol. 2008;159(3):197–202.
- Allen NE, Key TJ, Dossus L, et al. Endogenous sex hormones and endometrial cancer risk in women in the European Prospective Investigation into Cancer and Nutrition (EPIC). Endocr Relat Cancer. 2008;15(2):485–497.
- Hage JJ, Dekker JJ, Karim RB, Verheijen RH, Bloemena E. Ovarian cancer in female-to-male transsexuals: report of two cases. Gynecol Oncol. 2000;76(3):413–415.
- Dizon DS, Tejada-Berges T, Keolliker S, Steinhoff M, Grania CO. Ovarian cancer associated with testosterone supplementation in a female-to-male transsexual patient. Gynecol Oncol Invest. 2006;62(4):226–228.

- Schenck TL, Holzbach T, Zantl N, et al. Vaginal carcinoma in a female-to-male transsexual. J Sex Med. 2010;7(8):2899-2902.
- Peitzmeier SM, Reisner SL, Harigopal P, Potter J. Female-tomale patients have high prevalence of unsatisfactory Paps compared to non-transgender females: implications for cervical cancer screening. J Gen Intern Med. 2014;29(5):778– 784.
- Potter J, Peitzmeier SM, Bernstein I, et al. Cervical cancer screening for patients on the female-to-male spectrum: a narrative review and guide for clinicians. J Gen Intern Med. 2015;30(12):1857–1864.
- Coleman E, Bockting W, Botzer M, et al; World Professional Association for Transgender Health. Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People, Version 7. https://s3.amazonaws .com/amo_hub_content/Association140/files/Standards%20 of%20Care%20V7%20-%202011%20WPATH%20(2)(1).pdf. Published 2011. Accessed January 21, 2017.
- Obedin-Maliver J, Light A, de Haan G, Jackson RA. Feasibility of vaginal hysterectomy for female-to-male transgender men. Obstet Gynecol. 2017;129(3):457–463.
- American College of Obstetricians and Gynecologists.
 ACOG Committee Opinion No. 444: Choosing the route of hysterectomy for benign disease. Obstet Gynecol. 2009;114(5):1156-1158.
- Van Caenegem E, T'Sjoen G. Bone in trans persons. Curr Opin Endocrinol Diabetes Obes. 2015;22(6):459–466.
- Light AD, Obedin-Maliver J, Sevelius JM, Kerns JL. Transgender men who experienced pregnancy after female-to-male gender transitioning. Obstet Gynecol. 2014;124(6):1120-1127.
- Stephens SC, Bernstein KT, Philip SS. Male to female and female to male transgender persons have different sexual risk behaviors yet similar rates of STDs and HIV. AIDS Behav. 2011;15(3):683–686.
- Wierckx K, Van Caenegem E, Pennings G, et al. Reproductive wish in transsexual men. Hum Reprod. 2012;27(2):483–487.
- Ethics Committee of the American Society for Reproductive Medicine. Access to fertility services by transgender persons: an Ethics Committee opinion. Fertil Steril. 2015;104(5):1111-
- Wallace SA, Blough KL, Kondapalli LA. Fertility preservation in the transgender patient: expanding oncofertility care beyond cancer. Gynecol Endocrinol. 2014;30(12):868–871.
- Cipres D, Seidman D, Cloniger C 3rd, Nova C, O'Shea A, Obedin-Maliver J. Contraceptive use and pregnancy intentions among transgender men presenting to a clinic for sex workers and their families in San Francisco. Contraception. 2016;95(2):186–189.