




Promoting Cervical Cancer Screening Among Female-to-Male Transmasculine Patients

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Cervical cancer is the fourth most common cancer diagnosed in women worldwide.¹ In 2012, 528,000 women globally were diagnosed with cervical cancer.² In 2013, there were 11,955 cervical cancer diagnoses in the United States, and 4,217 women in the United States died from cervical cancer.³ Incidence and mortality rates from cervical cancer in the United States decreased by more than 60% from 1955–1992.⁴ This decline was largely due to introduction of the Papanicolaou (Pap) test, which is a simple clinical test used to screen for precancerous or cancerous lesions.⁵ The U.S. Preventive Services Task Force (USPSTF) recommends screening via Pap test every three years for women age 21–29. For women age 30–65, the screening window can be increased to every five years if testing for high risk Human Papilloma Virus (hrHPV) is done in addition to the Pap test. In 2018, the USPSTF

Over the past decade, there have been further reductions in cervical precancerous or cancerous lesions directly related to introduction of the human papilloma virus (HPV) vaccine,⁷ which the Food and Drug Administration approved in 2006.⁸ However, incidence and mortality rates from cervical cancer remain high in some underserved populations within the United States, primarily due to not accessing cervical cancer screening (i.e. Pap tests), and slow national uptake of HPV vaccination.⁹ The primary causal agent for cervical cancer is HPV, and risk factors for HPV infection to progress to cancer include tobacco smoke and compromised immune system.¹⁰

Transmasculine people (those who were assigned female sex at birth but whose gender identity lies on a diverse spectrum of masculinity) are an underserved and often marginalized population who

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updated their cervical cancer screening guidelines and concluded that testing for hrHPV alone—omitting the Pap test—every 5 years is effective for patients ages 30–65 years who have previously had normal screening results.⁶ We believe that these recommendations should apply to anyone with a cervix, including transgender men.

require cervical cancer screening if they have a cervix.¹¹ The National Transgender Discrimination Survey found that just 8% of the transmasculine respondents (assigned female sex at birth) had a hysterectomy to remove the uterus and, in most cases, the cervix.¹² While this indicates that the vast majority of transmasculine

people still require cervical cancer screening, only 27% reported that they had a Pap test in the past year, compared with 43% in the U.S. adult cisgender female population.¹³

Several health disparities put transmasculine people at greater risk for cervical cancer compared to cisgender women (people who were assigned female at birth and identify as female). People who identify as LGBTQ have higher rates of

smoking as compared to cisgender, heterosexual-identified people, and transmasculine people are more likely to be under- or uninsured as compared to cisgender women, as well as less likely to use preventative healthcare services.^{14, 15} Gynecological examinations in transmasculine individuals can also heighten dysphoria between gender identity and physical anatomy.¹⁶

National HPV vaccine data has not examined rates based on transgender identity, but overall national targeted goals for vaccination have not been met.¹⁷ Sexual orientation and gender identity data are not routinely collected for cancer cases and deaths, and thus, incidence of cervical cancer among transmasculine people is unknown. Nevertheless, gynecologic malignancies in this population have been reported.¹⁸

Incidence and mortality rates from cervical cancer in the United States have dramatically decreased over the last several decades,¹⁹ largely due to introduction and widespread use of the Pap test. More recently, widespread reductions in incidence and mortality from cervical cancer are associated with HPV vaccination. Pap testing screens for precancerous or cancerous cervical lesions that allow healthcare providers to treat in an earlier





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(and more treatable) stage of cervical cell change.²⁰ One of the most critical risk factors for developing invasive cervical cancer is not seeking regular screening.²¹ The majority of studies indicate that transmasculine people may be at increased risk for cervical cancer due to underutilization of cancer screening and delayed follow-up care.²² Research indicates that transmasculine individuals are significantly less likely to have up-to-date Pap tests than cisgender women.²³ Lower rates of regular screening put transmasculine people at greater risk of late diagnosis, oftentimes when the disease process is more difficult to treat.

Research notes various challenges to cervical screening for transmasculine individuals, including “a disconnect between biological sex and gender identity, a desire to ignore the existence of natal reproductive structures, lack of awareness that the cervix is still present after supra-cervical hysterectomy, a frequent history

of trauma, heightened anxiety about undergoing genital examinations, and a high incidence of nulliparity.” Nulliparity means never having given birth. Additionally, exogenous testosterone administration leads to vaginal atrophy, which may cause vaginal exams associated with Pap testing to be more painful experiences.^{24, 25, 26}

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Moreover, recent research has also discovered that healthcare providers perceived transmasculine patients to be at minimal risk of cervical cancer. Some providers believe that transmasculine individuals who do not engage in penile-vaginal intercourse, are uncomfortable with cervical screening, or plan to obtain a hysterectomy do not require Pap tests in accordance with age-specific guidelines.²⁷

HPV Vaccination

Human papilloma virus (HPV) is a group of more than 200 viruses, and it is the primary cause of nearly all cervical cancer. HPV can also cause vulvar, vaginal, anal, penile, and oropharyngeal cancers, as well as genital warts. The Food and Drug Administration (FDA) has approved three HPV vaccines, including Gardasil, Gardasil 9, and Cervarix. All three of these vaccines protect against HPV strains 16 and 18, which are two high-risk HPV strains that cause nearly 70% of cervical cancers. Gardasil also protects against strains 6 and 11, which cause 90% of genital warts. Gardasil 9 protects against these four strains (6, 11, 16, 18) plus five additional cancer-causing strains, including 31, 33, 45, 52, and 58. As of May 2017, Gardasil 9 is the only HPV vaccine available in the United States, though Gardasil and Cervarix are still used in many other countries.²⁸

The HPV vaccine is most effective when completed prior to sexual debut. Clinical trials have found that Gardasil, Gardasil 9, and Cervarix provide nearly 100% pro-



tection against HPV strains 16 and 18.^{29, 30} Furthermore, clinical trials have demonstrated that Gardasil 9 provides nearly 100% protection against HPV strains 6, 11, 31, 33, 45, 52, and 58.³¹ In addition to vaccination, cervical cancer screening remains a priority in the prevention of cervical cancer. All individuals age 9 to 45 should be vaccinated against HPV.

The Affordable Care Act requires most private insurance plans to cover preventive care, including the HPV vaccination, without a copay or deductible. Medicaid covers HPV vaccination, as immunizations are a mandatory service for eligible patients under age 21. Additionally, the federal Vaccines for Children Program provides immunization services for children 18 years and younger who are Medicaid eligible, uninsured, underinsured, receiving immunizations through a Federally Qualified Health Center or Rural Health Clinic, or are Native American or Alaska Native.³²

Reasons for Increased Risk

Transmasculine people are less likely to make full use of preventative healthcare, including cervical cancer screening, for a number of reasons. First, health insurance is a significant barrier to sexual and reproductive healthcare for transgender patients, particularly because 1) health insurance is tightly linked with employment, 2) health insurance policies may not be sufficient to cover all gynecological healthcare, 3) health insurance companies may or may not have gender-affirmative healthcare providers in their networks, and 4) changing one's gender marker on a health insurance policy may cause some insurers to believe, erroneously, that certain screening exams and other procedures are not covered. In fact, the federal government clarified in 2015 that:



...it is up to the health care provider to determine whether a patient belongs to the population in question. An individual's sex assigned at birth or gender identity also cannot limit them from a recommended preventive service that is medically appropriate for that individual; for example, a transgender man who has breast tissue or an intact cervix and meets other requirements for mammography or cervical cancer screening must receive those services without cost sharing regardless of sex at birth.³³



In a qualitative research study conducted at The George Washington University (GWU) which interviewed transmasculine individuals to better understand barriers to cervical cancer screening, transmasculine participants described the intimate link between health insurance coverage and employment.³⁴ Participants noted that even if they are offered health insurance through their workplace, it is often difficult to determine which plan best covers transgender health needs. Also, even for transmasculine people with health insurance, health insurance coverage may not be sufficient to pay for all needed gynecological care, which then becomes an additional financial burden on the patient.

Research study participants also addressed changing their gender marker on their health insurance policies. Participants noted that if they change their gender marker from female to male on their health insurance policies, they then might have difficulty with their health insurance company's willingness to pay for cervical cancer screening and other gynecological screenings and/or procedures. Benefits to changing the gender marker from female to male might include improved coverage for testosterone-related care.



The Impact of Nondiscrimination Protections and Lack Thereof

One transmasculine research study participant noted that gender identity is not federally protected in employment discrimination policies, which further complicates finding and securing employment. No distinct federal legislation has been passed that prohibits gender identity-based discrimination, and the term “gender identity” is not explicitly stated in the discrimination policy of the U.S. Equal Employment Opportunity Commission (EEOC). Although gender identity is not explicitly included in Title VII of the Civil Rights Act of 1964, recent U.S. federal court rulings have found that some forms of gender identity discrimination constitute sex stereotyping, and therefore constitute sex discrimination under Title VII.³⁵ Thus, gender identity is federally protected based on federal court case law. These protections apply regardless of opposing state or local laws. The U.S. Equal Employment Opportunity Commission states the following as the federal guidelines for discrimination in the workplace:

It [is] illegal to discriminate in employment against a job applicant, employee, or former employee because of the person’s race, color, religion, sex (including pregnancy), national origin, age (40 or older), disability or genetic information. These federal laws also prohibit employers from retaliating against workers who oppose discriminatory employment practices – for example, by reporting incidents of sexual harassment to their supervisor or human resources department – or against those who participate in an employment discrimination proceeding – for example by filing an EEOC charge, cooperating with an EEOC investigation, or participating in an employment discrimination lawsuit.³⁶

The EEOC further states the following:

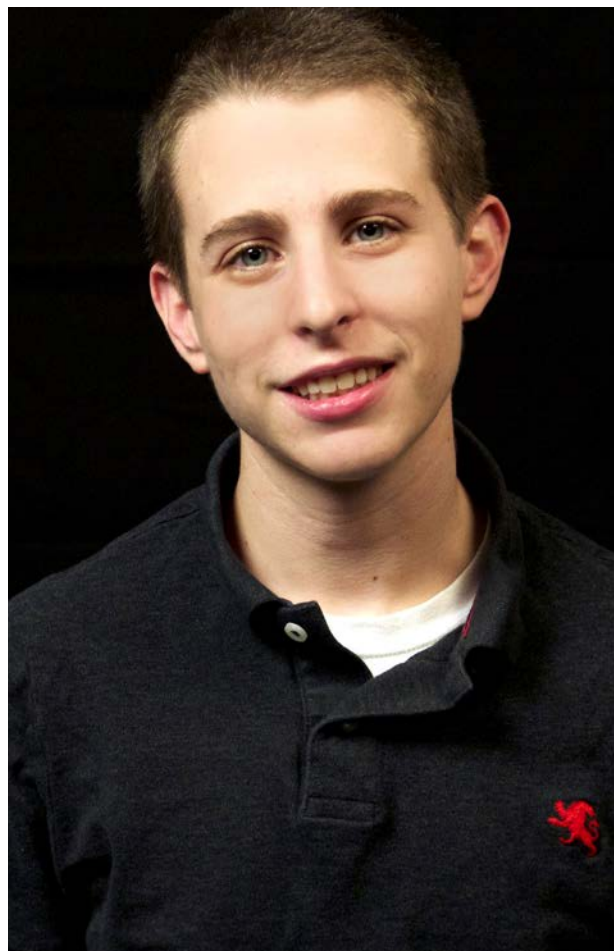
While Title VII of the Civil Rights Act of 1964 does not explicitly include sexual orientation or gender identity in its list of protected bases, the Commission, consistent with Supreme Court case law holding that employment actions motivated by gender stereotyping are unlawful sex discrimination and other court decisions, interprets the statute's sex discrimination provision as prohibiting discrimination against employees on the basis of sexual orientation and gender identity.³⁷

In May 2016 the U.S. Department of Health and Human Services Office of Civil Rights (OCR) published a final rule implementing Section 1557, the Affordable Care Act's primary nondiscrimination provision.³⁸ The rule states that discrimination based on gender identity is prohibited in health facilities, programs, and activities receiving federal funding, as it constitutes a form of sex discrimination banned by Title IX of the Education Amendments of 1972. While this rule had major potential to reduce discrimination in health care for transgender people, it was enjoined nationwide by a federal district court judge on December 31, 2016. The order prohibited the Department of Health and Human Services from enforcing the nondiscrimination rule's gender identity component.³⁹

In May 2017 the U.S. Department of Justice (DOJ) requested that the federal courts "remand this matter to HHS and stay this litigation..." [seeking to overturn the December 2016 injunction blocking the rule] "...pending the completion of the rulemaking proceedings."⁴⁰ The DOJ, which under then Attorney General Jeff Sessions challenged other transgender nondiscrimination regulations, sought "the opportunity to reconsider the regulation at issue," including "the reasonableness, the necessity, and the efficacy" of the Section 1557 nondiscrimination regulation related to gender identity.⁴¹ As of May 2019, it was expected that the Trump Administration was preparing an effort to rescind the ACA nondiscrimination regulation's explicit protection against anti-transgender discrimination. However, many advocates maintain that this regulation is still in force and remains the law of the land.

Even though there is some protection against anti-transgender discrimination in federal law, it may be nearly impossible to determine if a transgender person is not offered a job, or not provided appropriate health care, based on gender identity discrimination or some other factor. The Report of the 2015 U.S. Transgender Survey, conducted by the National Center for Transgender Equality, reports the unemployment rate among transgender respondents was 15%, which is three times higher than the unemployment rate of the general United States population. Thirty percent of transgender respondents reported being fired, denied a promotion, or experiencing some form of mistreatment due to their gender identity or expression.⁴²

Experiences of being discriminated against in healthcare settings, or fear of being discriminated against, can also deter sexual and gender minorities from seeking preventative healthcare. In the GWU study, one transmasculine participant noted his experience with a psychiatrist, which occurred in a session during which he shared his gender identity:



The psychiatrist's recommendation was for me to visualize a box closing up around those thoughts [about his gender identity as a trans man], then to visualize myself placing that box on a shelf in the back of my mind. That was her actual, professional recommendation for me. If I had seen the right psychiatrist at that age, I maybe could've transitioned ten years sooner, which would've been great... It made me not really trust [psychiatric] care, and I have a pretty critical view of them.

Another transmasculine research study participant provided an anecdote concerning a time when the clinical office staff knowingly used incorrect pronouns:

I said [when I arrived to the office] that I prefer the pronouns he/him/his, and [the office staff person] said, "Okay, Miss."



Challenges Related to Body Dysphoria and Cervical Cancer Screening

Transmasculine individuals often feel significant body dysphoria with the invasiveness of cervical cancer screening. In the GWU qualitative research study, one transmasculine participant noted about his experience of a Pap test:

I just laid there and was horrified for however long it took, I don't remember. I was in some other world where I wasn't getting [a Pap test] while I was having it done... I'd like to have left my body, transubstantiate, let me go elsewhere while [the Pap test] took place.

Another participant noted:

Most of the time, I can forget that my anatomy doesn't match up with my identity. I'm only really reminded if I need to go to the bathroom or shower, when I'm undressed. But, [during cervical cancer screening], it's magnified because it's invasive, and there's no work around in your brain of how you can try to say something else is going on. It's not a procedure that men go through... it's not a situation that they deal with, and some part of you is saying, "If you were a real guy, you wouldn't be doing this right now... you wouldn't have to do this." There's not really a way to avoid [those thoughts].

Additionally, transmasculine people sometimes believe or are told by providers that they do not need to be screened for cervical cancer due to a mistaken belief that they are not at risk for contracting HPV and/or developing cervical cancer.⁴³ However, HPV transmission does not require penetrative sex. Any intimate skin-to-skin contact during a non-penetrative sexual experience is considered a primary mechanism for genital HPV transmission. Also, many transgender men may have had penetrative sex earlier in their lives, which could have exposed them to HPV.

Other Risk Factors for Cervical Cancer

Studies of the lesbian, gay, bisexual, and transgender adult population demonstrate that LGBT people smoke at rates of 1.1-2.4 times that of the general population.^{44, 45} This is significant because research has demonstrated that tobacco smoke is an established HPV cofactor for cervical carcinogenesis.⁴⁶ The 2015 Washington DC Trans Needs Assessment found that 34% of transgender people use tobacco (23% of transmasculine people use tobacco), compared to 21% of the general population.⁴⁷ A 2013 study found that 33.2% of transgender people use cigarettes, compared to 18.9% of the full sample.⁴⁸ A 2004 study in California found that 30.7% of transgender people smoke, compared to 20.6% of the general population.⁴⁹ Tobacco smoke puts people at greater risk for cervical cancer development. Thus, transmasculine individuals could be at increased risk for cervical cancer development due to higher rates of smoking among transgender people.

Additionally, cigarette use is often correlated with some mental health conditions. Nicotine use induces pleasure and decreases stress and anxiety, and thus, smokers use nicotine to temper their

mood. Smokers experience a rebound effect upon nicotine withdrawal, which can include irritability, anxiety, depressed mood, and anhedonia (reduced ability to experience pleasure).⁵⁰ Furthermore, research demonstrates that transgender people suffer from anxiety and depression at much higher rates than does the general population. Anxiety disorders af-

“Tobacco smoke is an established HPV cofactor for cervical carcinogenesis”

fect the transgender population at rates as high as 38%, compared to 28.8% of the general population.^{51, 52, 53, 54} Depression affects the transgender population at rates of 48-62%, compared to 16.6% of the general population.^{55, 56, 57, 58, 59} Thus, transmasculine individuals are at increased risk for mental health conditions, particularly anxiety and depression. Research demonstrates that nicotine reduces anxiety and stress, which may result in increased cigarette use among transmasculine people. Therefore, transmasculine people could be at increased risk for cervical cancer development due to higher rates of smoking among transgender people, which may be due in part to higher rates of anxiety and depression among transgender people.

Current Policy

The American Cancer Society (ACS), US Preventive Services Task Force (USPSTF), American Academy of Family Physicians (AAFP), and American College of Obstetricians and Gynecologists (ACOG) agree that cervical cancer screening should start at age 21 regardless of HPV vaccination status or age of sexual debut.^{60, 61, 62} Screening is recommended via Pap test every three years until age 29. The screening interval may be stretched to every five years for women ages 30–65 if HPV co-testing is done in addition to the Pap test and all results are normal.⁶³ The USPSTF recently updated the cervical cancer screening guidelines and concluded that screening every five years with HPV testing alone, or every five years with HPV testing and cytology (co-testing), is acceptable for patients ages 30–65 years with previously normal results; that is, cytology is not necessarily indicated. This updated recommendation does not apply to patients with previous in utero exposure to diethylstilbestrol, previous diagnosis of high-grade precancerous cervical lesions or cervical cancer (i.e. ASC-H or CIN), or immunocompromised patients (e.g. patients living with HIV).⁶⁴ Patients with a history of abnormal Pap tests or

who are immunocompromised should be screened at shorter intervals, according to the American Society for Colposcopy and Cervical Pathology (ASCCP) guidelines.⁶⁵

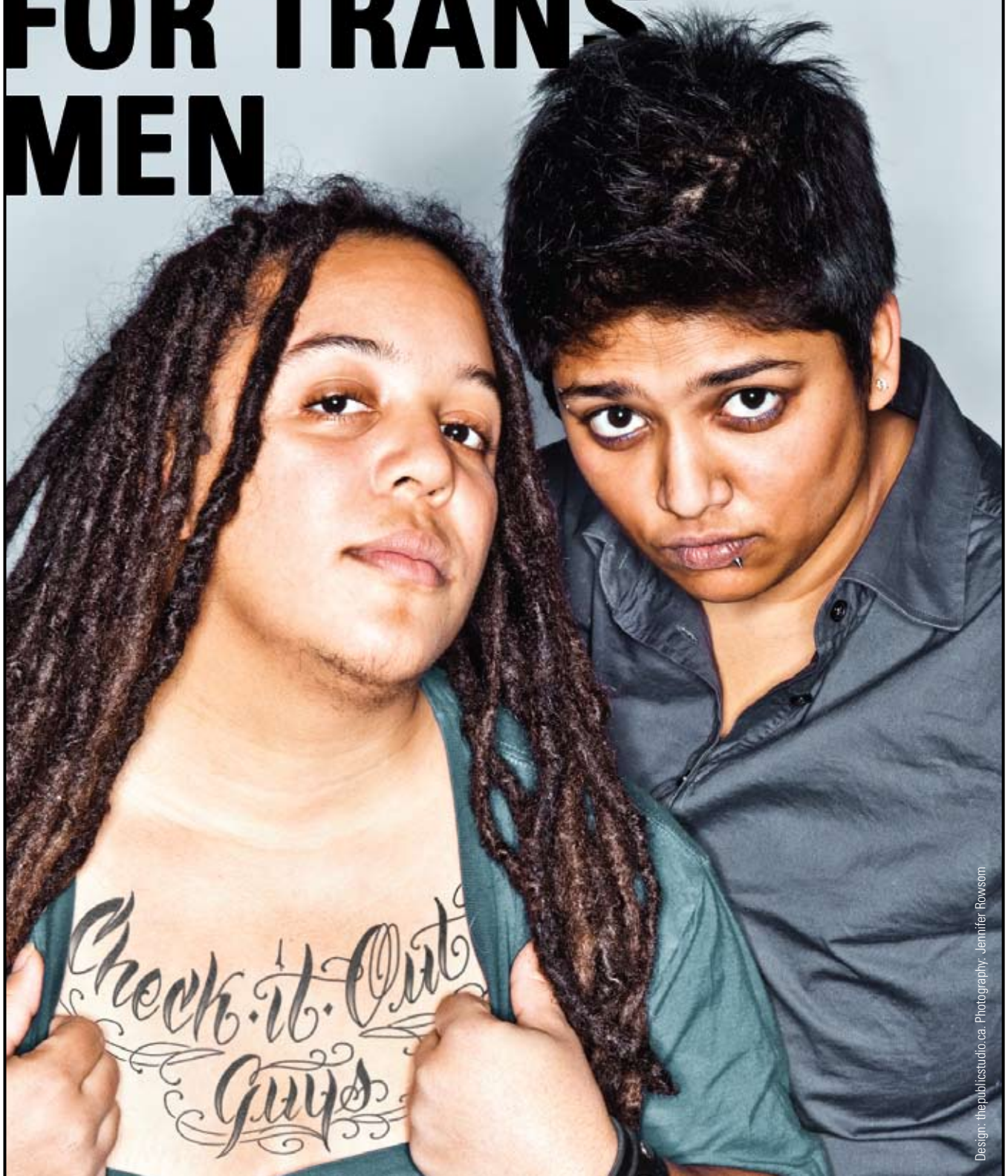
Transmasculine individuals are not mentioned specifically in the ACS or USPSTF guidelines for cervical cancer screening. However, the American Congress of Obstetricians and Gynecologists recommends that transmasculine individuals be screened for cervical cancer according to the same guidelines and timeframes with which cisgender women are recommended to be screened for cervical cancer.⁶⁶ The ACOG Committee Opinion on Healthcare for Transgender Individuals states that “[a]ge-appropriate screening for breast cancer and cervical cancer should be continued unless mastectomy or removal of the cervix has occurred.”⁶⁷ If the cervix is completely removed at the time of hysterectomy, the patient is HPV negative, and there was no prior history of high-grade cervical dysplasia or cervical cancer, no further Pap tests are necessary.⁶⁸ Screening for other HPV-related cancers may still need to be performed if the patient is not HPV negative.



In the United Kingdom, Cancer Research UK has swapped the word “woman” for “everyone with a cervix” in their Smear Test Campaign ads in order to be inclusive of transgender people.⁶⁹ In Canada, the Check-It-Out-Guys Pap Campaign was developed by and for transmasculine individuals and their healthcare providers in order to provide information about why and when transmasculine people need cervical cancer screening, as well as how to make the experience of getting one better.⁷⁰

“...the American Congress of Obstetricians and Gynecologists recommends that transmasculine individuals be screened for cervical cancer according to the same guidelines and timeframes with which cisgender women are recommended to be screened for cervical cancer. ”

PAPS MATTER FOR TRANS MEN



Design: thepubstudio.ca. Photography: Jennifer Rowson

If you've ever been sexually active (in any way) and have a cervix, you need regular Paps. Check out our website for more information and tips on how to make getting a Pap easier.



checkitoutguys.ca

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Although there are a broad range of preventative care issues for transmasculine patients, cervical cancer screening is an important focus. While it was once considered one of the deadliest gynecological cancers, cervical cancer is now described by the Centers for Disease Control and Prevention (CDC) as the most preventable cancer among people with traditionally female reproductive organs due to innovations in screening and immunization.⁷¹

Recommendations

HPV vaccination should be encouraged among transmasculine individuals for primary prevention. Current Advisory Committee on Immunization Practices (ACIP) guidelines recommend that all people be vaccinated for HPV between the ages of 9-26 years old, preferably before sexual debut in order to derive the maximum benefit.⁷² In October 2018, the U.S. Food & Drug Administration (FDA) expanded the recommended age range for use of the HPV vaccine to include people ages 27-45 years.⁷³

The most recent ACIP guidelines note that for people who initiate the vaccination series between the ages of 9-14 years, only two vaccine doses are needed.⁷⁴ For people who initiate the vaccination series between the ages of 15-45 years, three vaccine doses are recommended. Three doses are also recommended for immunocompromised people.⁷⁵ Because the vaccine does not protect against all strains of HPV, vaccinated people should still follow recommended screening guidelines.

Cervical cancer screening should be promoted among transmasculine people through patient in-reach and community outreach. Cervical cancer screening should be encouraged for all people with a cervix, including transmasculine people who have not had a complete hysterectomy including removal of the cervix. Patient education can be conducted through informational materials with words and images sensitive to transmasculine people. Support groups, peer health educators, and media messaging are important tools for community outreach in transmasculine communities. For example, the DC Area Transmasculine Society (DCATS) is a peer-facilitated social and support group in Washington, D.C. that serves as a resource for anyone who identifies on the transmasculine spectrum.⁷⁶ The organization's monthly support meetings and social events often include healthcare topics, such as preventative screening, hormone therapy, surgical options, and health insurance concerns for transmasculine patients. Patient in-reach and community outreach approaches can make transmasculine individuals more aware that cervical cancer screening is an important aspect of preventative healthcare and empower them to discuss this with their healthcare providers.

Conduct public education and awareness campaigns to educate transgender men and their loved ones about the importance of cervical cancer screening. Most transgender men retain their cervix and should be offered cervical cancer screening on a regular basis. Campaigns like the Check-It-Out-Guys Pap Campaign conducted in Toronto can educate transgender men and their family and friends to access these life-saving screenings.

Healthcare providers should have frank discussions regarding cervical cancer screening options, including self- versus provider-collected swabs of the frontal canal for high risk HPV (hrHPV), with their transmasculine patients. Traditional cervical cancer screening is performed via a provider-collected swab of the cervix, called a Pap test, as well as testing for high risk HPV. The cervical sample is obtained via a speculum exam of the frontal canal. As noted previously, this can cause significant body dysphoria for transmasculine people and is often a deterrent from seeking cervical cancer screening.

In 2018, the USPSTF updated their cervical cancer screening guidelines and concluded that screening via provider collection of a cervical sample for hrHPV testing alone, omitting the Pap test, every 5 years is effective for patients ages 30-65 years who have previously had normal screening results.⁷⁷ Because this sample is provider collected, it still requires performance of a spec-

ulum exam. But what if the sample were collected by the patient instead, via self-swab of the frontal canal? How would the effectiveness of this method compare to the traditional method?



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“...the self-collected vaginal swab was 71.4% as effective as the provider-collected swab.”

Researchers at Fenway Health have examined this question, and showed that self-collected HPV swabs of the frontal canal with no speculum exam are not quite as effective in detecting HPV as provider-collected cervical swabs using a speculum; however, they still have some effectiveness. This research study involved a one-time visit for transmasculine study participants and included a self-collected frontal HPV swab, clinician-administered cervical HPV swab, and a brief interview with participants regarding desirability of self-versus provider-collected swabs.⁷⁸ Of the 131 participants who completed both the self- and provider-collected HPV tests, 21 cases of hrHPV were detected by the provider-collected cervical swab, whereas 15 of these cases were accurately identified by the self-collected frontal swab.⁷⁹ This indicates that the self-collected vaginal swab was 71.4% as effective as the provider-collected swab. More than 90% of participants noted a preference for self-collection.⁸⁰ Based on these data, self-collected frontal swabs are a viable and patient-centered alternative for cervical cancer screening in transgender patients who do not wish to have a speculum exam.^{81, 82}



Thus, healthcare providers should review the pros and cons of self- versus provider-collected swabs with their age-eligible transmasculine patients. Provider collection is more effective, but also more intrusive. Self-collection is within a patient's control, and may ultimately lead to a higher percentage of transmasculine individuals seeking cervical cancer screening, but it is slightly less effective than provider screening. In considering these options, it is important for patients to remember that the USPSTF only recommends hrHPV testing alone for people ages 30-65 with previous negative cervical cancer screening results. It is also important to know that if a patient chooses the self-swab strategy and the result is positive for hrHPV, the patient will require follow-up with a Pap test or colposcopy, both of which require a speculum exam.

Transgender Women and Cancer Risk Stratification

Transgender women are individuals who were assigned male sex at birth and whose identity lies on a diverse spectrum of femininity. Minimal data exists regarding the percentage of transgender women who undergo genital reconstructive surgery for gender affirmation, though we know that penile inversion vaginoplasty is the method of choice for transgender women who do pursue genital reconstruction.^{83, 84} Neovaginal hrHPV infection has been documented among transgender women, though its prevalence remains uncertain.⁸⁵ Screening transgender women for hrHPV depends on the type of bottom surgery patients have had and the type of tissue used to create the neovagina. There is a dearth of research regarding neovaginal cancer screening in transgender women, and thus, more research is needed before developing widely disseminated guidelines.



Health insurance providers should be required to cover all preventative screening and treatment based on anatomical organs present rather than sex assignment at birth or binary gender markers. Health insurance coverage is a significant barrier to preventative screening for transgender patients, which is particularly true for sexual and reproductive health needs. If transmasculine individuals change their gender marker from female to male on their health insurance policies, they may have difficulty with their health insurance company's willingness to pay for cervical cancer screening and other gynecological screenings. Benefits to changing the gender marker to male might include improved coverage for testosterone-related care. Thus, the recommendation is that health insurance companies cover healthcare services based on anatomical organs present in each individual patient, irrespective of the gender marker. Gender markers are based on a binary idea of gender and thus, do not consider the diverse spectrum of gender identity. Health equity for transgender patients can only be achieved once insurance providers agree to pay for care based on anatomical organs present rather than sex assignment at birth. As noted above, this is required by the federal government,⁸⁶ and health insurance companies should be held accountable for this requirement.

Ensure that the health insurance policies offered through places of employment are gender affirmative. In order to cultivate a healthcare environment that is transgender-inclusive, it is important that health insurance policies offered to employees are gender inclusive and transgender-friendly. This includes, but is not limited to, incorporation of gender-affirmative providers who are considered in-network, as well as guaranteed coverage of preventative healthcare services based on anatomical organs present rather than a binary gender marker. This is important in order to increase gender diversity within a workplace, particularly within a healthcare setting that strives to care for transgender and gender non-conforming patients.

Medical school and residency training should include more education on LGBTQ health, and all people in healthcare settings should educate themselves in order to improve communication and demonstrate respect for transgender patients. It is important that healthcare personnel are supported in becoming better educated about the health needs of sexual and gender minorities so that it is universally accepted that these patients, just like cisgender, heterosexual patients, deserve to receive care according to evidence-based medicine and national preventative care screening guidelines. Medical schools in the United States spend approximately ten hours throughout the four years of medical school dedicated to LGBTQ health training, which leaves

many providers poorly equipped to treat LGBTQ patients.⁸⁷ Education about transgender-specific healthcare needs ought to be included in undergraduate and graduate medical education. The Association of American Medical Colleges (AAMC) published a 2014 guidebook entitled, *Implementing Curricular and Institutional Climate Changes to Improve Health Care for Individuals Who Are LGBT, Gender Nonconforming, or Born with DSD: A Resource for Medical Educators*.⁸⁸ This guidebook presents a competency-based medical education framework for addressing the health inequities experienced by LGBT and gender nonconforming people, as well as people born with differences of sex development (DSD).⁸⁹

In addition to improving knowledge about the health needs of LGBTQ patients, it is equally important that providers and all medical staff (i.e. front desk staff, medical assistants, nurses) receive training in interacting with LGBTQ patients so that they can discuss sexual orientation and gender identity in a way that is comfortable for all people involved. Healthcare personnel are encouraged to educate themselves through use of existing online training and seminars that discuss transgender health. The National LGBT Health Education Center, a program of The Fenway

Institute, recently launched an online series of six training videos about transgender-specific health needs.⁹⁰ The training series is entitled, *Optimizing Transgender Health: A Core Course for Health Care Providers*. The series addresses topics such as gender affirmation, preventative care, hormone therapy, and gender-affirming surgery.

The National LGBT Health Education Center, a program of The Fenway Institute, recently launched an online series of six training videos about transgender-specific health needs.

Additionally, the Center of Excellence for Transgender Health at the University of California, San Francisco (UCSF) offers lectures, online training, and easy access to guidelines for transgender healthcare.⁹¹ Madeline B. Deutsch, Director of Clinical Services of UCSF Center of Excellence for Transgender Health, recently published *Guidelines for the Primary and Gender-Affirming Care of Transgender and Gender Nonbinary People*, 2nd edition.⁹² The World Professional Association for Transgender Health (WPATH) has also published *Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People*, which is based on the best scientific evidence to date and expert opinion.⁹³

Sexual orientation and gender identity data should be gathered by intake forms, electronic medical records, health surveys, and cancer registries. The Institute of Medicine initially called for increased research on lesbian health and the inclusion of sexual orientation data in population-based surveys, particularly federally funded surveys, in 1999.⁹⁴ In 2011 the IOM called for increased research on LGBT health and collection of both gender identity and sexual orientation data on surveys and in clinical settings.⁹⁵ For many facets of cervical cancer, including incidence, stage distribution, morbidity, and mortality, we have minimal information specific to sexual and gender minority patients.⁹⁶ Sexual orientation and gender identity data should be included in the same way that race, ethnicity, and age data is collected in federally funded

health surveys and in electronic medical records. Furthermore, transgender patients generally want all people involved in their care, including medical assistants, nurses, pharmacists, and physicians, to be aware of their birth sex and transgender identity.⁹⁷ Many transgender people recognize that this awareness is important in order for them to receive the best possible care.

Collection of sexual orientation and gender identity data can be further improved by incorporating preferred name and pronouns as points of data collection in electronic medical records. The legal and preferred names of transgender patients may differ, and thus, storing preferred name and pronouns in each patient's electronic medical record conveys respect for the patient and helps increase patient comfort.⁹⁸

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