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Comprehensive HIV Prevention for Transgender Persons

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Abstract

Transgender persons are at high risk for HIV infection, but prevention efforts specifically targeting these people have been minimal. Part of the challenge of HIV prevention for transgender populations is that numerous individual, interpersonal, social, and structural factors contribute to their risk.

By combining HIV prevention services with complementary medical, legal, and psychosocial services, transgender persons' HIV risk behaviors, risk determinants, and overall health can be affected simultaneously. For maximum health impact, comprehensive HIV prevention for transgender persons warrants efforts targeted to various impact levels—socioeconomic factors, decision-making contexts, long-lasting protections, clinical interventions, and counseling and education.

We present current HIV prevention efforts that reach transgender persons and present others for future consideration.

Transgender persons are those whose gender identity does not conform to gender norms and expectations traditionally associated with their sex assigned at birth. Cisgender persons are those whose gender identity conforms to their birth sex. A 2008 synthesis of published US

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CONTRIBUTORS

M. S. Neumann conceptualized the article, reviewed and synthesized the literature, read and summarized intervention manuals described in Table 2 and the supplemental materials, and wrote initial and subsequent drafts of the article. T. J. Finlayson contributed to the conceptualization of the article and the review and synthesis of the literature, wrote a section of the article, and provided critical review and revision of all drafts of the article. N. L. Pitts contributed to the review, synthesis, and interpretation of the literature and provided critical review and revision of the article. J. Keatley contributed to the literature review and provided critical review and revision of the article drafts for important intellectual content.

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studies reported that HIV rates among Black, White, and Hispanic transgender women (assigned “male” at birth) were 56%, 17%, and 16%, respectively.[1] These figures are higher than or comparable with 2011 HIV rates among Black, White, and Hispanic men who had sex with men (36%,15%,and 17%,respectively)[2] and Blacks, Whites, and Hispanics in general (42%, 4%, and 12%, respectively).[3] HIV infection rates among transgender men (assigned “female” at birth) have been difficult to determine,[4,5] but estimates range from 0% to 3%.[1] Separate rates for nonbinary transgender persons are not available as data on this subgroup are limited.[6]

The United States’ National HIV/AIDS Strategy notes that transgender persons are at high risk for HIV infection and efforts specifically targeting transgender populations have been minimal.[7] Given the complex determinants of HIV infection among transgender persons, preferable prevention strategies likely will be comprehensive—a combination of structural, biomedical, and behavioral interventions with demonstrated efficacy in reducing HIV infection.

We summarize the nature of transgender persons’ risks for HIV infection, present the best-evidence prevention that is available and how to apply that prevention in transgender-specific and sensitive ways, and elaborate on immediately available options for a comprehensive HIV prevention approach for transgender people.

DETERMINANTS OF HIV

Transgender adults and adolescents, regardless of HIV status, have many individual, interpersonal, social, and structural factors contributing to HIV infection risk, not all of which are unique to their gender identity.[8] Individual and interpersonal factors contributing to HIV infection for transgender women and men are presented in Table 1. Although HIV rates among transgender men are currently low, their risk is not negligible. Other individual and interpersonal factors for transgender persons overall include sexual assault (64%), physical abuse (61%), and lack of familial support (57%).[12]

In addition to these factors, transgender persons experience more social stressors than cisgender persons. Social and structural factors creating stress among transgender persons include unemployment (66% transgender women, 4% transgender men), stigma and discrimination (63% overall), and homelessness (19% overall, 57% transgender women).[1,11,12] Stressors are compounded by discrimination on the basis of one’s social identity (e.g., race, class, gender expression, immigration status). The health and well-being of transgender persons is influenced by these factors and social stressors over their life course, creating unique dynamics requiring transgender-sensitive prevention approaches.

HIV infection among transgender persons is generally attributed to engaging in condomless receptive intercourse with cisgender men who have sex with men (Table 1).[1,4] Transphobia, employment discrimination, and expensive gender reassignment procedures (GRPs), both hormonal and surgical, create financial hardships among transgender women that can lead to agreeing to commercial sex with customers who pay more to have condomless sex.[13] Transgender men engage in sex work to affirm their male identity and to earn money for

GRPs.[4,5] Not having been socialized in the gay community, transgender men may not know how to negotiate safe sexual practices with their male partners who have sex with men.[4,5] Some transgender men who use testosterone may experience increased libido and vaginal dryness, both of which elevate their HIV risk.[14,15] Transgender persons may forgo condoms with their primary sexual partners for gender identity affirmation.[13] This is concerning because condoms are sometimes not used with primary partners with discordant HIV status.

Transgender persons could become infected with HIV from sharing syringes to inject drugs, hormones, or silicone, although they may be more likely to acquire HIV by having sex with a partner who injects drugs.[16] General drug and alcohol use is common and may be used to cope with gender dysphoria, stress, and anxiety and to make engaging in sex work easier.[13] Drug and alcohol use may also play a role in acquiring or transmitting HIV infection by undermining the will or ability to negotiate safer sexual practices.

HIV is only one of many public health problems occurring in the transgender community.[7] Other public health conditions prevalent in that community include discrimination-based physical and verbal abuse and homicide; poor mental health, including depression and suicidal thoughts; alcohol and drug use; economic marginalization; and unmet health care needs resulting from limited health care access and negative health care encounters.[1,17] These co-occurring problems may additively increase sexual risk. Operario and Nemoto[8] argue that these conditions indicate co-occurring epidemics that interact and reinforce each other and call for bundling of HIV prevention services with complementary health and social services that are synergistic in their health benefit, cost-effective, and accepted by the transgender community. Such programs would benefit from fostering resiliency among transgender persons by providing supportive role models and incorporating resilience strategies, such as belief in natural diversity in sexual orientation and gender identity, a right to define one's own gender identity, taking strength from surviving adversity, cultivating hope for the future, finding safe places, and connecting with a supportive community.

HIV PREVENTION

We present HIV prevention interventions for transgender persons organized according to the five tiers of Frieden's[18] Health Impact Pyramid. The base of the pyramid represents public health strategies that reach large numbers of people and require little effort from individuals receiving the benefit and, thus, have the potential for largest impact. At each progressively ascending tier of the pyramid, the numbers reached decreases and individual effort increases and, consequently, the strategies have decreasing potential impact.

Behaviors, context, and socioeconomic determinants are factors associated with high rates of HIV infection. Adding approaches to current strategies and addressing these factors comprehensively, instead of individually or partially, are more likely to maximize health impact among transgender persons. The line between "current" (widely available) and "future" (less common or nonexistent) interventions varies by location.

Socioeconomic Factors

Interventions that change social determinants of health form the base tier of the pyramid. Such interventions reach people collectively and include promoting social justice, improving economic opportunities and educational attainment, and increasing access to services.[18] Transgender persons may benefit from policies applied to the general public. Examples include living wage ordinances, public transportation, distribution of free condoms, laws permitting pharmacy sale of syringes, interpreter services, and health insurance coverage under the Patient Protection and Affordable Care Act.[19] However, transgender persons must find sensitive and experienced providers, and insurance coverage for GRPs is uncommon.[20] We could not identify HIV prevention efforts at this level that target transgender people.

Future prevention efforts to address underlying social determinants of health for transgender persons could consider including

1. general equivalency diploma (GED) programs, job training programs, and English language education;
2. housing programs;
3. physically safe social venues and activities;
4. transgender-sensitive health care and mental health services;
5. legal services with expertise in transgender and immigration issues;
6. sentencing diversion programs;
7. cohesive transgender communities and social organizations;
8. policies that do not force binary gender selection; and
9. health insurance that covers GRPs and all physical sex–related care (e.g., Papanicolaou smears for transgender men).

Organizations could consider providing supportive services, such as HIV and hepatitis C testing, sexuality education, clothing, and referrals, for example, to substance abuse treatment, GED programs, and employment and legal services. Legal services could provide assistance with nondiscrimination protections and changing names and gender markers on identity documents. Monitoring HIV/AIDS prevalence, incidence, and prevention needs of local transgender populations may likely be improved by collecting epidemiologic data, including the two-question method for assessing gender,[21] and separating transgender identities in reports.

Changing Context to Foster Healthy Decisions

The pyramid's second tier represents interventions that change the environmental context for a population so that healthy options are the collective default choice. Non–HIV-related interventions at this level include clean water, road improvements, and smoke-free laws.[18] We could not find widespread second-tier HIV prevention efforts specifically for transgender people. However, transgender persons benefit from policies applied to the general population, such as opt-out HIV screening.

Future interventions to change the environmental context for transgender people might appropriately include

1. programs to decrease violence against transgender persons;
2. sensitivity training for law enforcement and corrections officers with prohibition of profiling and harassment;
3. sensitivity training for school officials;
4. gender-affirming policies in correctional facilities;
5. laws prohibiting transgender discrimination in employment, housing, and social services; and
6. routine sexually transmitted infection and HIV testing in medical settings.

Social marketing campaigns to eliminate stigma and discrimination may change community norms and improve availability and acceptability of healthful options for transgender persons. Behavioral economic interventions targeting transgender persons, such as conditional economic incentives for remaining free of sexually transmitted infections, could be researched as temporary alternatives to exchanging sex for basic needs.[22]

Long-Lasting Protective Interventions

Third-tier interventions are those that are directed toward individuals one time or infrequently and do not require ongoing clinical care.[18] An HIV prevention intervention at this level is male circumcision, which can decrease HIV acquisition for cisgender males.[23] Male circumcision's applicability to transgender persons may be limited to persons who were assigned male and who have not undergone gender reassignment surgery. Transgender persons may benefit from interventions for the general population (e.g., immunizations for hepatitis A and B and human papillomavirus), depending on their sexual and injection practices. To increase their safety in public settings and in relationships, transgender persons may choose to have voice and communication therapy or training in their presenting gender's social and relationship skills.

Future long-lasting, protective interventions for transgender persons could include peer support groups. Although not intended as HIV prevention interventions, medically administered hormones and gender reassignment surgery could avoid unsafe injection practices and improve mental health and associated risk behaviors.[14] In a recent study, postoperative transgender women were less likely to have condomless anal sex, a practice with a high risk of HIV transmission, compared with preoperative transgender women.[24]

Clinical Interventions

The fourth tier of the pyramid represents ongoing, evidence-based clinical care for individuals.[18] Current HIV prevention at this level includes biological (e.g., antiretroviral therapy [ART], pre-exposure prophylaxis [PrEP], vaginal and rectal microbicides) and behavioral (e.g., substance abuse treatment, mental health services) interventions.[7] Although biological interventions can lower community viral load and prevent HIV disease progression, transmission, and acquisition, their effect is limited by lack of access to clinical

care, insufficient medication adherence, and imperfect effectiveness of the interventions. Fourth-tier HIV prevention efforts specifically for transgender persons are presented in the Substance Abuse and Mental Health Services Administration's guidance on providing culturally competent services.[25] Transgender persons may benefit from ART and PrEP, but can experience decreased response to hormone replacement therapy (HRT) if they are on ART.[15]

Suggested future clinical interventions for transgender persons could include

1. training for improved provider attitudes and behavior toward transgender patients;
2. increased availability of gender-affirming, knowledgeable, and transgender-specific and -sensitive medical care;
3. increased availability of transgender-sensitive substance use and alcohol dependence treatment;
4. insurance coverage for gender dysphoria; and
5. receiving HRT and ART or PrEP from the same provider to encourage HIV care and prevention.[14]

Although not an HIV prevention intervention, medically managed HRT could enhance transgender persons' mental health,[14] and HIV testing or monitoring could be done during HRT appointments. Mutual patient–provider trust is essential for transgender persons to discuss their treatment challenges, HIV risk behaviors, and gender reassignment history. If transgender persons do not disclose their sex assigned at birth, providers may base examinations on presenting gender and not perform necessary health screenings (e.g., for prostate cancer).

Counseling and Education Interventions

The fifth tier represents health education provided to individuals in clinical visits or other settings.[17] Counseling and education interventions seek to discourage unhealthy or risky behaviors and to encourage healthy or safer behaviors. Individual effort is high in this tier and increases with each intervention session. Although changing environmental context has more population influence, counseling and education interventions are more feasible.[18] Systematic reviews have shown that evidence-based interventions (EBIs) are efficacious in reducing HIV-related risk behaviors and in increasing protective behaviors among at-risk populations.[1] However, the Centers for Disease Control and Prevention's *Compendium of Evidence-Based Interventions and Best Practices for HIV Prevention*[26] notes that currently there are no EBIs specifically designed for transgender participants. Although several interventions have been developed for transgender women,[17,27–31] to date, few have been rigorously evaluated and two are undergoing randomized controlled trials.[30,31] No interventions have been developed for transgender men.

Analyses by Herbst et al.[1] indicate that future counseling and education interventions for transgender persons should contain

1. referrals to housing, job training, legal, and medical services;
2. awareness of local antidiscrimination laws;
3. sexual and drug risk-reduction skills building; and
4. HIV counseling and testing.

Skills in coping with stress, disclosure of gender identity, and social behaviors of the presenting gender may also be beneficial. If these components are not covered by an EBI, they could be incorporated as adaptations with input from transgender persons.[32] However, extensive adaptation requires time and resources for formative research, incorporation of findings, and evaluation of the reinvented intervention.

To minimize adaptation effort, HIV/AIDS service organizations could select EBIs that target risk behaviors and determinants common to the organization's transgender clients and that match the organization's implementation capacity. To aid EBI selection, we searched the Centers for Disease Control and Prevention's list of EBIs[26] to find those with implementation manuals. We read the manuals to identify EBIs that target any of the previously discussed HIV risk behaviors and determinants common to transgender persons. We identified 12 EBIs that address at least four of these factors (Table 2). It is likely that an organization's transgender clients may need multiple EBIs to address all of their relevant HIV risk factors. Table A, available as a supplement to the online version of this article at http://www.ajph.org, presents implementation capacity considerations.

When one is adapting EBIs, sensitizing content is important— for example, terminology for sexual behaviors and pre- and post-GRP anatomy, non-anatomical models for condom skills practice, and suitable examples of risk-reduction goals and barriers. Service organizations may want to consider adding relevant content, such as HIV risk from shared injection of hormones, commercial sex work customers, appropriate risk scenarios, vulnerabilities from stage of physical transition and desire for gender affirmation, and referrals to transgender-sensitive medical and social services. Depending on the EBI's participants, organizations may consider omitting references to perinatal transfer, pregnancy, babies, breastfeeding, and pelvic inflammatory disease.

IMPLICATIONS

Because transgender persons' risk of HIV infection is exacerbated by complex social determinants and intersecting social and gender identities, comprehensive HIV prevention for this population is warranted. For maximum health impact, comprehensive prevention programs that are developed by assessing the HIV prevention needs of local transgender persons, prioritizing at-risk transgender groups, identifying currently available interventions and services, and determining needed resources are more likely to be effective.

The Health Impact Pyramid may be useful for identifying gaps and selecting interventions at each tier for high-priority groups. Comparing interventions across tiers may ensure that interventions selected for higher tiers (e.g., referrals to transgender-competent health services) are supported by interventions at lower tiers (e.g., transgender care and sensitivity

training for clinicians). Bundling comprehensive HIV prevention services with complementary medical, legal, and psychosocial services can simultaneously affect transgender persons' HIV risk behaviors, risk determinants, and overall health.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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TABLE 1

Prevalence of Individual and Interpersonal Factors Contributing to HIV Among Transgender Women and Transgender Men: United States

Factors	Transgender Women,[1,9–11] %	Transgender Men,[1,4,9,10] %
Condomless receptive anal intercourse	44–69	13
Condomless insertive anal intercourse	5–27	17
Condomless receptive vaginal intercourse	5	17
Condomless insertive vaginal intercourse	6	23
Multiple sexual partners	32–73	17–34
Sex work, sexual exchange	11–42	0–31
Previous sexually transmitted infections	13–21	6–46
Injection drug use		
Inject drugs	1–12	4–21
Share syringes for injecting drugs	2	NA
Hormone use		
Inject hormones	27	12–91
Share syringes for injecting hormones	6	NA
Silicone use		
Inject silicone	25	…
Share syringes for injecting silicone	6	…
Sex while drunk or high	39	NA
Depression	51	48
Anxiety	40	48

Note. NA = not available. Data in the table are from an unsystematic literature review. Statistical comparability is not implied.

TABLE 2

Evidence-Based Interventions Adaptable for Transgender Persons, Depending on Their HIV Behavioral Risk Factors and Determinants

	Evidence-Based Interventions											
Risk Behaviors and Determinants	**CLEAR[33,a]**	**Community PROMISE[34,a]**	**Connect[35,a]**	***d*-up: Defend Yourself![36,a]**	**Healthy Relationships[37,a]**	**Partnership for Health[38,a]**	**RESPECT[39]**	**Safety Counts[40]**	**Sister to Sister[41,a]**	**START[42,a]**	**Street Smart[43]**	**WILLOW[44,a]**
Condomless sex	X	X	X	X	X	X	X	X	X	X	X	X
Injection drug use		X	X			+	X	X	^		X	
Types of sexual partners	X	X					X		^		X	X
No. of sexual partners	X	X	X	X	X	X	X				X	X
Mental health issues				^	X	+	+			X +	X	+
Commercial sex work		X							^		X	
Substance use	X	X	X	X		+	X	X		X +	X	
Social connectivity			X	X	X	X	X	X			X	X
Economic marginalization						+	+			X	X	
Health care needs	X					X	+	X			X	

Note. X = HIV risk behaviors and determinants addressed by the intervention; + = HIV risk behaviors and determinants that can be addressed by referrals; ^ = HIV risk behaviors and determinants that can be addressed by the intervention facilitator, as needed.

[a]Evidence-based interventions with training and capacity building assistance available through the Effective Interventions Web site (https://effectiveinterventions.cdc.gov). The other evidence-based interventions have training and technical assistance available through other sources listed on the Web site.