Equitas Health
Institute

Research HIV and Young Adults Report

EquitasHealth.com/institute
Document Date: April 8, 2025

Equitas Health
Institute

Table of Contents | HIV and Young Adults Report

Disclaimers 1
Why did the Equitas Health Institute produce this report? 1
Introduction 1
HIV History in the United States 2
HIV Treatment 3
Epidemiology of HIV among Young Adults 4
The State of HIV Prevention and Testing in Young Adults 4
Challenges with Prevention and Testing 5
The Economic Impact of HIV 6
HIV Globally 6
Subpopulations 6
BIPOC Young Adults 7
Gay/MSM/ Same-gender loving Young Adults 7
Bisexual Young Adults 8
Heterosexual Young Adults 8
Cisgender Women 9
Lesbian/Same-gender loving Young Adults 10
Trans women Young Adults 10
Trans men Young Adults 11
Non-binary/Gender-diverse Young Adults 11
HIV and Houselessness 12
Sex Workers 13
Mental Health and Young Adults 14
Sexual Health in Young Adults 15
HIV Policy 15
Strength & Resilience 16
Conclusion 17
References 18
HIV and Young Adults Report: Acronyms (In alphabetical order) 22

Disclaimers

Disclaimer 1:
Binary gendered terms are used when referencing literature to remain consistent with the research source. “Men” and “women” are not chosen words by report authors.
Disclaimer 2:
The research used for this report does not fully represent all sexual orientations and gender identities (such as intersex, asexual, pansexual, and Two-Spirit) comprising the LGBTQ+ umbrella.
Disclaimer 3:
In this report, MSM/Gay and same-gender loving men are grouped, given the frequent overlap in HIV research within this demographic.

Why did the Equitas Health Institute produce this report?

This report was created to empower young adults by providing them with the information they need to not only understand HIV but to rise above the stigma and take control of their health. HIV remains a critical public health challenge, particularly for young people who may not believe that they are at risk for HIV. While advancements in treatment and prevention have come a long way, HIV still affects young adults, especially those who are marginalized. For marginalized young adults, challenges exist in access to adequate information, healthcare, and support. Stigma and misinformation surrounding HIV remain widespread. In today’s political climate, HIV is often caught in the crossfire of healthcare debates and shifting policies. Anti-LGBTQ+ Executive Orders and hostile policies overshadow HIV advocacy and complicate service delivery for people at risk. Access to funding, resources, education, and prevention programs is inconsistent and, in many areas, highly inadequate. Navigating sexual health is about building resilience and showing young adults that they are not defined by a diagnosis, the politics surrounding sexual health, or the uncertainty of living with HIV.

Right now, this report is essential because there is a unique opportunity to make a difference. Young adults need guidance and support to navigate the realities of living in a world where HIV is still a pressing health concern. Together, through resilience, solidarity and education, we can advocate for a future where living with HIV no longer holds power over anyone’s life.

Introduction

HIV in young adults is a pressing public health concern in the United States. In 2021, young adults accounted for 58% of the estimated 32,100 new HIV diagnoses in the United States, highlighting the urgent need for effective prevention and treatment strategies (HIV.gov, 2023). Ages defining young adulthood vary within the medical literature. Understanding HIV among young adults is complicated by different definitions. Despite definitions ranging from 13 to 29, young adults are consistently overrepresented in HIV infections. This report will define young adulthood as the life stage between adolescence and middle adulthood, which ranges from late teens to early 30s (13-34 years).

Human Immunodeficiency Virus (HIV) is a virus that attacks the body’s immune system. It does this by invading and destroying white blood cells that fight infections, named CD4 cells (WHO, 2023). Without treatment, HIV can lead to acquired immunodeficiency syndrome (AIDS). Although many people have flu-like symptoms after HIV infection, some people with HIV do not have symptoms at all. The only way to be certain if one has HIV is to be tested for it.

There are three stages of HIV. Stage 1 is acute HIV infection, which occurs right after transmission. During Stage 1, people have a large amount of HIV in their blood. The disease is contagious and may invoke flu-like symptoms. Stage 2 is chronic HIV infection, also called asymptomatic HIV transmission or clinical latency. During this stage, HIV is still active in the body, and while people in this stage may not have symptoms or get sick, the disease is still contagious. People who take HIV treatment stay in this stage and may never move into Stage 3. Without treatment, people may stay in Stage 3 for years until the viral load (amount of HIV in the blood) increases. Lastly, Stage 3 is AIDS, which is the most severe stage of HIV transmission (CDC, 2022a). A person is diagnosed with AIDS when their CD4 cell count drops below 200 (WHO, 2023). People with AIDS have a high viral load and can easily transmit HIV to others. They also have severely damaged immune systems and may suffer from opportunistic infections or other serious illnesses or cancers. Without treatment, people with AIDS usually survive around three years (CDC, 2022a). Fortunately, due to advances in treatment, AIDS diagnoses are much less common now than in previous decades (CDC, 2022a).

HIV History in the United States

HIV has been a part of U.S. history for over 40 years. While there is speculation that cases began as early as the 1960s, AIDS was not formally identified in the U.S. until 1981 (Ayala et al., 2021; He, 2018; Rask, 2020). The first cases were seen in previously healthy gay men who became immuno-deficient and developed what would later be known as opportunistic infections. HIV/AIDS was initially called "gay cancer" and GRID (gay-related immune deficiency), as it was believed that only men who have sex with men (MSM) could contract the illness. By 1982, transmission routes were identified, and groups most recognized as being vulnerable to AIDS included MSM, hemophiliacs, heroin users, and people from Haiti. In 1983, AIDS cases were first reported in women (HIV.gov, 2023). Three years after the first cases of AIDS, HIV was identified as the cause of AIDS in 1984 (Agarwal-Jans, 2020). During this time, the governmental response was minimal, with then-President Ronald Reagan not mentioning the word AIDS until 1985. Community members stepped up in caring for people who have HIV/AIDS, and ACT UP was formed by Larry Kramer in 1987 as a response to the AIDS crisis to demand government action (ACT UP, 2023). In 1990, the Ryan White HIV/AIDS Program was first authorized to help low-income PLWH (HRSA, 2022).

By 1995, 500,000 cases of AIDS had been reported in the U.S. The year 1996 was a turning point for the AIDS crisis, with the FDA having approved the first protease inhibitor, which gave way to highly active antiretroviral therapy (HAART), which became highly effective for the treatment of HIV. 1996 was the first year when the number of new AIDS cases declined since the beginning of the epidemic, and AIDS was no longer the leading cause of death for all American adults ages 25-44. However, it was still the leading cause of death for African Americans in this age group (HIV.gov, 2023). HAART was mainly responsible for the decline in AIDS diagnoses and deaths during this time. Unfortunately, the declines did not last after 1997, and surveillance data found that AIDS diagnoses later increased among women, African Americans, Hispanics, injection drug users (IDU), heterosexuals, people living in the South, and lower-income populations (Lee et al., 2001). In addition to treating HIV/AIDS, scientific and public health communities sought preventative medicine and programming.

In 1986, then U.S. Surgeon General Everett Koop called for AIDS/HIV and sex education, along with a call for widespread condom use. The following year, the CDC launched the campaign America Responds to AIDS (ARTA) to spread awareness of the disease and education on risk factors. Prevention efforts by the CDC were made in coalition with several national organizations representing minorities, including Black and Latinx Americans. Local and state public health HIV/AIDS programs were designed to educate on healthy behaviors, reduce stigma around the disease, and promote testing (Merson, 2008).

HIV/AIDS prevention was transformed with the development of Post-Exposure Prophylaxis (PEP). PEP was the first medicine to prevent HIV transmission and was designed for short-term use following exposure. In its conception, the medication was primarily developed for and used by at-risk healthcare workers. Evidence of its effectiveness remained anecdotal until 1997 when its first formal study suggested that it may reduce HIV/AIDS risk by over 80% (CDC, 2022). The medication was recognized for its efficacy in reducing the risk of HIV/AIDS acquisition among healthcare workers (John, 2020). During this treatment time, researchers began to uncover the need for HIV testing. Treatment was especially important in these populations disproportionally affected. The FDA approved the first HIV home testing kit in 2012, as well as a viral load test and HIV urine test (HIV.gov, 2023). Today, the CDC funds nearly 2,000,000 tests per year (CDC, 2021).

Throughout the 2000s, treatment for HIV/AIDS started to expand and grow more affordable for some. The CDC published guidelines for the use of PEP among the general population in 2005. The CDC additionally expanded Pre-Exposure Prophylaxis (PrEP), a once-a-day pill prescribed prior to HIV exposure. Shortly after, PrEP use was approved by the FDA in 2005 (CDC, 2014). Since HAART (or ART) was less toxic than previous AZT medication, people living with HIV were expected to live into their 60s. This prognosis is much longer than HIV/AIDS patients in the 80s and 90s who were given months to live after diagnosis. In addition, testing became faster in 2002, with the FDA approving the first rapid HIV test detecting the virus in just 20 minutes. While new infections continued to increase in the United States, the country did a better job of addressing the epidemic through research, outreach, and policy (APA, 2017a). Through the 2010s, access to HIV continued to increase, although gaps in care were becoming more apparent. The Obama Administration also released the first comprehensive National HIV/AIDS Strategy for the United States in 2010. In 2016, the Prevention Access Campaign (PAC) launched the U = U campaign.

U = U stands for "undetectable equals un-transmittable," meaning that when someone living with HIV is on effective treatment, they can reach an undetectable viral load. When one is undetectable, they cannot transmit HIV to their sexual partners (PAC, 2023).

Despite prevention efforts and promising treatment, HIV rates increased during the 2010s, with young adults continuing to be disproportionately affected. In the past decade, there remain gaps in care, and it is estimated that 13% of PLWH are unaware of their status (CDC, 2023b). In 2019, the U.S. Department of Health and Human Services (HHS) announced the Ending the HIV Epidemic (EHE) initiative, with a goal to reduce the number of new HIV infections by 90% by 2023 (HHS, 2019). Today, HIV/AIDS awareness continues to spread throughout the country, and there has been an increased effort to emphasize education, testing, and behavioral change to decrease HIV transmission along with biomedical intervention to prevent and treat HIV/AIDS (APA, 2017b). HIV/AIDS in the United States has come a long way through prevention efforts, research, and treatment. However, the work continues to eliminate HIV, especially among young adults.

HIV Treatment

HIV, once associated with high mortality, is now a treatable disease. Treatment allows people living with HIV (PLWH) to live long and healthy lives. Today, treatment is considered a primary avenue to HIV prevention. Treatment as Prevention (TaSP) refers to taking HIV medication to prevent the transmission of HIV. Medication is the most efficacious treatment and prevention measure for HIV (CDC, 2019). The most common medication promoted through TaSP is Highly Active Antiretroviral Therapy (HAART). HAART is a combination of drugs that lowers the amount of HIV in the body (Eggleton & Nagalli, 2023). When the amount of HIV in a person's blood becomes too low for detection, HIV is no longer transmittable sexually (CDC, 2019; Eggleton & Nagalli, 2023). This is sometimes called Undetectable = Untransmittable (U=U) (Eggleton & Nagalli, 2023). HAART not only prevents transmission but improves the quality of life among people at risk of HIV transmission. Patients on HAART, as prescribed, can live long and healthy lives without concern over spreading the disease to their partners (CDC, 2019).

The treatment of HIV through medication has evolved from its conception in the 1980s. One of the earliest drugs used to treat HIV was Azidothymidine (AZT) (Edwards et al., 2020). AZT, taken as a pill twice daily, proved to be effective in lowering early HIV disease progression. However, the drug carries a number of significant side effects with limited tolerability (CDC, 2019). Also, while AZT slowed the replication of HIV, the mutation was not prevented. Resistance to AZT thus developed quickly and substantially diminished its efficiency (CDC, 2019). With one medication, HIV was able to develop resistance quickly. Opposed to using monotherapy, multiple drugs are now prescribed together as a part of combination antiretroviral therapy (ART) (CDC, 2019). AZT can still be used within drug combinations today. However, new antiretrovirals are better tolerated. The use of additional medications in ART from different drug classes prevents HIV mutation found within previous monotherapies (Eggleton & Navalli, 2023). Options for taking HIV medication have continued to increase. ART is now offered in the form of a long-acting injectable for individuals who may have barriers to taking once-daily pills (HHS, 2024). Innovative methods of ART dissemination improve accessibility for all people living with HIV.
HIV treatment often includes the treatment of comorbidities and coinfections. Comorbidities are defined as having more than one disease at a time.

Comorbidities and coinfections vary for People living with HIV who are on stable ART and undetectable and for individuals with normal progression of HIV when untreated. Comorbidities that may be of concern for People living with HIV (PLWH) include diabetes mellitus, cardiovascular disease, and respiratory disease (Roomaney, 2022). In contrast, coinfections refer to infections that occur in a person living with HIV. When HIV weakens the immune system, pathogens take advantage through "opportunistic infections." People living with HIV (PLWH) are at greatest risk for opportunistic infections in late-stage diagnosis, after developing immunosuppression, or lack of consistent use of medication as prescribed (Valliant, 2023). Common coinfections include Hepatitis B, Hepatitis C, and tuberculosis (CDC, 2024). Additional infections and diseases complicate HIV treatment. Additional health issues may make it harder to achieve viral suppression and threaten overall health/well-being (Martinez-Sans et al., 2022).

Despite medications improving lives and reducing transmission, there is still no cure for the disease. There are two objectives in HIV research: sustained viral suppression without medication and total eradication of the virus (HHS, 2024). One approach of interest includes therapeutic vaccination (Landovitz, 2023; Parums, 2024). Researchers have engaged in

several major vaccination trials within the past 20 years. Despite progress, trials have remained unsuccessful. Today's HIV vaccine trials remain in laboratories and early human trials (Landovitz, 2023). An additional approach of interest includes the use of Broadly Neutralizing Antibodies (bNAbs). These antibodies neutralize the effect of pathogens, such as HIV, to defend cells (Schreick, 2023). HIV cure research often uses analytical treatment interruption (ATI). ATI is a temporary or sustained pause in the use of ART under close medical supervision. Coupled with an attempt to cure the individual, it helps to tell researchers how well the individual responds to the clinical trial. For instance, in one trial using bNAbs, participants underwent ATI to see if the bNAbs were successful in a cure. One barrier to using this research method, though, is the common and reasonable concerns about viral rebound, or HIV increasing from undetectable levels to detectable levels (Bigler et al., 2024). Despite advances in treatment, HIV is still considered a chronic disease (CDC, 2019).

Epidemiology of HIV among Young Adults

HIV-related mortality and new diagnoses have continued to decline over recent years (CDC, 2023). This is largely due to ART and improved screening, testing, and sexual education. However, as of 2021, 1.2 million people were still living with HIV (CDC, 2021). Young adults, particularly those aged 13 and older, represent a significant portion of new HIV diagnoses in the United States (CDC, 2021).In 2021, people aged 13 to 34 accounted for 58% (18,700) of the estimated 32,100 new HIV diagnoses, highlighting the urgent need for effective prevention and treatment strategies (HHS, 2023; CDC, 2022). Despite these figures, a significant portion of young adults remain unaware of their HIV status or receive treatment for their status. Young adults are also less likely to report condom use and have high rates of other STIs and drug/alcohol use (Tao et al., 2020). This lack of awareness contributes to the spread of HIV, as individuals who are unaware of their infection status are more likely to engage in behaviors that can transmit the virus to others. In 2021, there were 19,986 deaths among adults and adolescents diagnosed with HIV in the United States. Some of these deaths could be attributed to various causes, including comorbidities such as COVID-19 (HHS, 2023).

Health disparities among young adults further exacerbate the impact of HIV (CDC, 2024). Despite recent decreases, the incidence of HIV is still increasing among specific populations. Racial and ethnic minorities and gay, bisexual, and other men who have sex with men (MSM) have higher rates of HIV than the general population. African American and Hispanic/Latino young adults experience higher rates compared to their white counterparts. Likewise, socioeconomic factors, such as access to healthcare and education, also play a role in these disparities (HHS, 2023; CDC, 2024). HIV diagnoses are also inequitable across states and regions in the United States. The South currently has the highest rates of HIV, with California having the most significant number of PLWH per capita (CDC, 2024)

The State of HIV Prevention and Testing in Young Adults

HIV testing is an essential component of HIV prevention, treatment, and care. Knowing one's HIV status allows people to get HIV treatment and is vital for preventing transmission. While the proportion of people who are aware of their HIV status has grown over the years, 13% of people with HIV did not realize they were HIV positive in 2019 (CDC, 2022a). According to the Kaiser Family Foundation (2022), people who find they are HIV-positive change their behavior to lower the risk of transmission, whereas those who are unaware of their status account for approximately 40% of new HIV infections.

From 2011 to 2017, the percentage of individuals aged 18-64 in the United States who had been tested for HIV increased from 42.9% to 45.9%. 4.3 million more people were tested in 2017 compared to 2011 (CDC, 2017). Despite the recommended age for HIV screening being 25 for young adults without identified risk factors, some studies have revealed a decline in HIV testing among individuals aged 18-24 and 25-34 over time (Nailan et al., 2018; Patel et al., 2020). This decline raises concerns about low awareness of HIV prevention and treatment and misconceptions about HIV transmission among young people, potentially increasing the risk of HIV infections and transmission in this population. According to the Centers for Disease Control and Prevention (CDC), individuals between the ages of 13 and 64 should undergo HIV testing annually (CDC, 2022b). Early detection of HIV facilitates access to care and treatment, which can significantly reduce morbidity and mortality while also improving quality of life.

When it comes to prevention, PrEP (Pre-Exposure Prophylaxis) proves to be a successful approach to preventing HIV transmission. Available under the brand names Truvada or Descovy, PrEP involves taking a daily pill that prevents HIV acquisition by protecting the

cells targeted by the virus (CDC, 2024). Truvada is recommended for individuals of any gender who are at risk of contracting HIV, while Descovy is specifically suggested for those assigned male at birth. Alongside Truvada and Descovy, Apretude, an injectable form of pre-exposure prophylaxis, has emerged as a means to prevent HIV transmission. Unlike traditional oral pills, Apretude is administered through injections, given every two months. Apretude offers a convenient and effective option for individuals at risk of HIV transmission (FDA, 2021). Generic versions of Truvada and Descovy, known as Emtricitabine/tenofovir (TDF/FTC) and tenofovir alafenamide/emtricitabine (TAF/FTC), are also available and approved for use. Unlike TDF/FTC, TAF/FTC is suggested for transgender women and individuals engaging in anal sex (CDC, 2021).

Pre-exposure prophylaxis (PrEP) substantially diminished the risk of HIV transmission by 99% when taken as recommended (HIV.gov, 2022). A systematic review by Fonner et al. (2016) showed that PrEP significantly reduces the risk of HIV prevention in young adults who engage in high-risk behaviors. However, PrEP use among this population is suboptimal, and discrepancies in PrEP prescription are even more pronounced for sexual and gender minority young adults (Hojilla et al., 2021). PEP (post-exposure prophylaxis) is another preventative measure against HIV transmission. PEP involves a brief regimen of HIV medications administered within 72 hours (3 days) following potential HIV exposure. It is essential to note that PEP is not a replacement for consistent use in individuals who may regularly face HIV exposure; it should only be utilized in emergencies (HIV.gov, 2023). PrEP medication is essential for young adults, particularly those with high risk, including college students. According to the CDC, 21% of new HIV infections were in 13–24-year-olds (CDC, 2022). Most college students fall within this age range, putting them at risk of contracting HIV. Likewise, inexperience, unsafe sexual practices, and inadequate sexual education make college students HIV-prone (Rawlins et al., 2020).

A couple-focused HIV prevention method can reduce the risk of HIV transmission. This method allows couples to get tested together and share their status, which helps treat infections and reduce risks. Couple-focused HIV prevention strategies like notifying partners and providing treatment aim to support partners who might not realize they are at risk. However, specific marginalized populations worry about stigma and violence when telling partners about their status (Operario et al., 2017). Prioritizing comprehensive sex education, reducing stigma, and expanding access to PrEP and PEP are essential to improve HIV prevention among young adults. Emphasis is needed among at-risk and marginalized populations. There has been significant progress in accessibility of HIV prevention among young adults (CDC, 2017). PrEP has advanced to include injectable forms, which increases accessibility towards those who may face barriers in taking a once-daily pill (Lorenzetti, 2023). In addition, the expansion of telehealth services may allow individuals on time constraints or with transportation barriers to more easily access healthcare needed for HIV prevention (Touger, 2019). Digital campaigns through social media on HIV prevention have grown, as well. Digital campaigns may target youth, who are more likely to engage in education through social media (Sitar, 2021). Despite barriers in HIV prevention among youth, prevention measures continue to evolve to meet new generations.

Challenges with Prevention and Testing

Young adults are less likely to experience HIV prevention, testing, and treatment than other age groups (Koeing et al., 2015; Patel, 2020). Barriers to testing include stigma, lack of awareness, and limited access to testing services (Patel, 2020). Stigma may occur within the patient, their community, or healthcare providers. Young adults often report fear of judgment from peers or healthcare providers, which can delay testing and diagnosis (Patel, 2020). Knowledge of HIV prevention may also prevent young adults from participating. Despite the importance of sexual health in HIV reduction, students are not required to undergo sexual health education (Wong, 2019). Additional barriers to access for young adults include the cost of care and health insurance coverage (Berthaud, 2022). Marginalized populations, including LGBTQ+ individuals, need additional consideration in HIV prevention strategies. Systematic barriers and daily discrimination introduce unique barriers to HIV testing and prevention within these populations. According to Quinn et al. (2023), sexual and gender-diverse young adults face higher rates of stigma related to homophobia, transphobia, and discrimination—gender and sexuality-based stigma impact access to HIV prevention and testing (2023). Knowledge of HIV may also not be equitable across populations, as LGBTQ+ folks are often excluded from sexual health education (Roberts, 2020).

HIV prevention and testing among young adults in the United States necessitate a diverse, multi-prong strategy. While progress has been made, challenges

such as stigma, limited access to care, and disparities in healthcare access persist. HIV knowledge may bridge the gap between HIV testing and stigma among young adults (James et al., 2018; Okumu et al., 2017). To adequately address this issue, it is crucial to prioritize comprehensive sex education, expand access to PrEP, implement innovative testing strategies, bridge healthcare gaps in underserved communities and stigma reduction through community-based and online approaches. Community program expansion may include mobile testing units and partnerships. Furthermore, continued government support and funding for initiatives like 'Ending the HIV Epidemic' are essential to achieving the goal of significantly reducing new HIV infections among young adults.

The Economic Impact of HIV

HIV has a significant economic impact on national healthcare expenditures. The most recent estimate of lifetime treatment HIV costs was $420,285 in 2019 (Bingham et al., 2021). In addition to treatment costs, the cost of HIV includes lost wages from effects of the disease and time spent in care. Despite growth in prevention measures, individual healthcare expenditures continue to rise (CDC, 2023). The most recent data on total lifetime cost of treating HIV nationally is $16,595,000,000 (CDC, 2023). Absenteeism and reduced workforce likewise create a national expenditure loss. The economic impact of HIV is critical in considerations of national HIV prevention.

HIV Globally

The impact of HIV varies significantly in national and global contexts. Globally, HIV is inequitable among lower and higher-income countries. The economic impact of HIV takes a significantly larger toll in lower-income countries (Moyo, 2023). HIV most significantly impacts countries in sub-Saharan Africa. Around 67% of people living with HIV (PLWH) globally are within sub-Saharan Africa (Moyo, 2023). This region is under-resourced in HIV prevention, sexual education, testing and treatment (Moyo, 2023). Eastern Europe and Central Asia have also seen rising rates of HIV in recent years (Parczewski 2024). This may be attributed to injection drug use and unprotected sex (Parczewski, 2024). Comparatively, rates are lower in the Middle East and North Africa (UnAids, 2023). Resourced countries, including the United States, continue to stand at the forefront of HIV prevention and treatment research.

While the rates of HIV are comparatively lower in the United States, prevalence remains significant (CDC, 2023). Privatized healthcare and employer-based insurance remain to be barriers toward accessing affordable treatment. In addition, the United States holds notable HIV inequities among marginalized racial populations (Holmes et al., 2023). International efforts include PEPFAR (The President's Emergency Plan for AIDS Relief) and the Global Fund (U.S. Department of State, 2024). The World Health Organization spearheads efforts in global reduction of HIV. Both programs target increased sexual health education and prevention resources in middle and lower-income countries.

Subpopulations

HIV can affect anyone irrespective of their sexual orientation, race, gender, ethnicity, age, or geographical location. However, certain racial, ethnic, sexual, and gender minority groups in the United States experience a disproportionate burden compared to the general population. Aspects of a young adult's identity may impact their risk level of a disease and how they may experience the disease. Minority Stress Theory is a leading theory explaining the relationship between marginalized groups and disparate health outcomes. Meyer describes minority stress as a conflict between dominant values and minority status in a greater social environment (1995). Stressors include prolonged stress from internalized homophobia, stigma, and experiences of discrimination and violence (Meyer, 1995). Goldhammer et al. suggest that repeated exposure to minority stress leads to psychological, physical, and mental health morbidity (2019). Positive HIV status may produce additional stigma toward sexual and gender minorities, including bisexual and same-gender loving adults. In addition to internalized stigma and sexual victimization, sexual and gender minorities living with HIV may encounter internalized HIV-related stigma and HIV-related victimization (Cramer, 2016).

Rates and risk factors among different races/ethnicities/sexualities and gender identities may be complicated by measurement tools. For example, the CDC monitors HIV transmission based on the method of transmission rather than an individual's self-identified sexual orientation. For instance, if a heterosexual man discloses to his healthcare provider that he has had a sexual encounter with another man, he is classified as "men who have sex with men." Similarly, if he admits to injecting drugs, he falls into the category of "people who inject drugs (PWID)." Although this method aids in HIV tracking, it results in subpopulations of PLWH not correctly being

accounted for (Bowleg & Raj, 2012). Our following sections will cover how HIV differs among young adults of different races/ethnicities, gender identities, and sexualities. Authors choose subpopulations with reference to literature that may cite the subpopulation differently.

BIPOC Young Adults

Black, Indigenous, and other people of color (BIPOC) young adults are disproportionately affected by HIV compared to their white counterparts (HIV.GOV, 2023). In 2021, Black/African American individuals, constituting 12% of the U.S. population, represented 40% of new HIV infections (13,000 out of 32,100 new HIV diagnoses). Hispanic/Latino individuals, comprising 18% of the population, accounted for 29% of HIV infections (9,300), and persons of multiple races, comprising 10.2% of the population, represented 17% of new HIV cases. In comparison, White individuals, at 61% of the population, made up 26% of new HIV infections (CDC, 2021). This disparity can be attributed to many factors, including systematic barriers to healthcare access, socioeconomic inequality, and social determinants of health. In addition, BIPOC individuals often encounter cultural stigma and discrimination, hindering open discussions about HIV. Stigmatization can lead to fear and avoidance of HIV testing and treatment.

In many BIPOC communities, there is a deficiency in comprehensive sex education, which plays a crucial role in HIV prevention. BIPOC young adults also face intersectional challenges, combining factors like race, socioeconomic status, and sexual orientation. These intersections and gaps in sex education may amplify vulnerabilities to HIV (Reifman & Arrington-Sanders, 2018; Philips et al., 2020). Likewise, structural barriers, such as inadequate healthcare infrastructure and limited resources, create challenges for BIPOC young adults in accessing HIV testing and treatment. According to the National Center for Health Statistics (Patterson et al., 2023), Black people have had the highest death rate due to HIV disease throughout most of the epidemic. Among Black and Hispanic people, HIV also ranks higher as a cause of death compared to their White counterparts (CDC, 2021). Furthermore, HIV was the sixth leading cause of death for Black people ages 25-34 in 2019 (Kaiser Family Foundation, 2021).

The U.S. Department of Health and Human Services (2023) indicates that Indigenous individuals report higher rates of HIV when compared to their white counterparts. Despite comprising only 1.7% of the U.S. population, they ranked fifth in estimated rates of HIV diagnoses in 2021 (HHS, 2023). Indigenous populations often face socioeconomic disparities and historical marginalization, which can increase their susceptibility to HIV. Moreover, barriers such as limited access to healthcare, cultural stigma, and discrimination further expose them to risks. Social determinants of health, including poverty and educational disparities, can also contribute to higher HIV prevalence among Indigenous populations (Negin et al., 2015). While there is limited data on HIV prevalence among Indigenous young adults in the United States, research indicates that historical trauma stemming from colonization can negatively impact the health and well-being of Indigenous young people (Armenta et al., 2016). For instance, trauma can lead to mental health issues such as anxiety, depression, and dissociation, which can impact the sexual behaviors of Indigenous young adults and potentially increase their vulnerability to HIV.

Gay/MSM/ Same-gender loving Young Adults

Men who have sex with men (MSM) are currently the subpopulation most affected by HIV in the United States. Despite advances in prevention and treatment, this population continues to experience a disproportionate rate of HIV infection. For instance, in 2021, MSM accounted for 71% (25,482) of new HIV diagnoses in the United States, with an increasing proportion among young MSM (HIV.gov, 2023). Young black MSM are disproportionately affected by HIV, accounting for half of new HIV diagnoses among young MSM (Hoenigl et al., 2016). Several risk factors contribute to this population's increased risk of HIV, including less frequent testing, which can result in a higher positivity rate when compared to young MSM who frequently get tested. This is especially true for young MSM of color. Other risk factors include infrequent condom use, having multiple sexual partners, and high rates of substance use (Hoenigl et al., 2016).

Similar to MSM, gay/same-gender loving young adults are also considered an at-risk group for HIV. Studies continue to reveal young gay and same-gender loving men's elevated rate and risk of HIV infections compared to the general population. For example, in 2019, 70% of new HIV infections were reported among same-gender loving men (CDC, 2022). This demographic experiences vulnerability to HIV due to interconnected factors, including stigma, discrimination, barriers to accessing healthcare, homophobia, and a lack of sex education.

Stigma and discrimination surrounding MSM/gay/same-gender loving men and HIV/AIDS persist in many communities, particularly communities of color, leading to fear of disclosure, social isolation, and reluctance to seek treatment. Similarly, stigma and discrimination can prevent young MSM and gay/same-gender loving men from having open discussions about sexual health and HIV prevention (Mustanski et al., 2011). Limited access to healthcare, including lack of health insurance and discrimination within healthcare settings, can create substantial barriers for young MSM and gay/same-gender loving men from seeking HIV testing, prevention services, and treatment (Smit et al., 2012). These structural barriers can disproportionately impact marginalized communities, including communities of color and individuals with low socio-economic status (Levy et al., 2014; Smit et al., 2012). Young MSM and gay/same-gender loving men with intersectional identities may face additional social and structural challenges that further increase their risk of contracting HIV. Likewise, belonging to more than one marginalized group can intersect with factors such as poverty, discrimination, and limited access to quality healthcare, exacerbating disparities in HIV prevalence (Birkett et al., 2019).

The mental health challenges associated with gay/same-gender loving people navigating their sexual identity can contribute to risky sexual behaviors and, thus, increase vulnerability to HIV. Mental health challenges such as depression, anxiety, and trauma can result in many of these folks turning to substance use as a coping mechanism. Substance abuse, particularly drugs like methamphetamine, can increase risky sexual behaviors for young gay/same-gender-loving men, leading to a high risk of HIV transmission (Smit et al., 2012; Stanton et al., 2022). In addition, comprehensive sex education addressing the specific needs of young MSM and gay/same-gender loving individuals is lacking, leaving young same-gender loving individuals uninformed about safer sexual practices and HIV prevention (Philips et al., 2020; Raifman & Arrington, 2018).

Bisexual Young Adults

According to the Movement Advancement Project (2016), bisexuals are the invisible majority within the LGBTQ+ population, with nearly five million adults in America identifying as bisexual (MAP, 2016). Bisexuality, as a sexual orientation, encompasses attraction to individuals of both the same and different genders. However, despite the growing awareness of diverse sexual orientations, bisexual young adults, like their peers, face unique challenges relating to HIV prevention and care. For example, bisexual young adults accounted for 70% (22,400) of the 32,100 estimated new HIV infections in 2021, making them a priority population for HIV prevention (HIV.gov, 2023).

The intersectionality of societal attitudes, stigma, stereotypes, biphobia, and healthcare disparities can contribute to increased vulnerability to HIV within the bisexual/same-gender loving community. Research indicates that bisexual individuals often encounter invisibility and biphobia, both of which may hinder open discussions about sexual health. The biphobia experienced by bisexual individuals can contribute to a lack of visibility within healthcare systems (Poteat & Baral, 2020; Lutete et al., 2020). Bisexual young adults may hesitate to disclose their sexual orientation due to fear of judgment or dismissive attitudes from healthcare professionals. This, in turn, hampers the development of tailored healthcare strategies that address the specific concerns of bisexual individuals regarding HIV prevention, testing, and treatment (Hadland et al., 2016).

Another significant aspect that compounds HIV risk for this population is the misconception of bisexuality. Society often oversimplifies sexual orientation, leading to harmful assumptions that bisexuality is a phase or a result of indecision. This binary perspective marginalizes bisexual folks and can discourage individuals from seeking appropriate information and resources, potentially increasing their vulnerability to HIV. Bisexual individuals often face discrimination from both the general population and within the LGBTQ+ community. This double stigma can lead to a sense of isolation, hindering engagement with HIV prevention efforts and support networks (Friedman et al., 2014). The exclusionary attitudes within these spaces can also discourage bisexual young adults from seeking relevant resources and information, exacerbating their vulnerability to HIV.

Heterosexual Young Adults

Despite the misconception, heterosexual individuals are at risk for HIV. According to the Centers for Disease Control and Prevention (CDC), heterosexual young adults aged 13 and older accounted for 22% of the 32,000 estimated new HIV infections in 2021. Men reporting heterosexual contact accounted for 6%, while women reporting heterosexual contact accounted for 16% of estimated new HIV infections (CDC, 2023). Most of these cases were among black and Hispanic men. Heterosexual individuals are primarily overlooked or inadequately addressed in HIV prevention, care, and research efforts. This is because

sexuality is not always straightforward and binary. Therefore, some heterosexual men may engage in sexual activity with other men and still self-identify as straight (Carrilo & Hoffman, 2018).

Misunderstanding, stereotypes, discrimination, HIV criminalization, and HIV stigma hampers heterosexual individuals' willingness to seek out HIV care services. For instance, heterosexual young adults may be reluctant to access HIV testing and education programs because they are concerned that they might be labeled as gay or in the closet. Heterosexual young adults living with HIV might feel excluded within HIV clinics that brand themselves as safe spaces primarily for gay and bisexual individuals, leading to low utilization of these spaces among this population (Kutnick et al., 2017). HIV criminalization also plays a significant role in the lives of many heterosexual men, as they are often blamed for the HIV epidemic among heterosexual women (Williams Institute, 2022).

Cisgender Men
The majority of HIV cases in the United States are cisgender men (CDC, 2024). Among these cases, the largest percentage of new HIV infections are aged between 13 and 24 years old (CDC, 2024). “Heterosexual” and “Cisgender” are often incorrectly used interchangeably. “Cisgender” refers to an individual whose gender identity aligns with the sex assigned at birth and may include individuals identifying with any sexuality (Merriam-Webster, 2023). HIV surveillance research may report on heterosexual men or cisgender men, as opposed to accurate reporting of separate categories. Cisgender men are a distinct population, encompassing an entire spectrum of sexual orientations. Currently, cisgender male-to-male sexual contact is the most common method of HIV transmission. (CDC, 2024). However, young cisgender men face additional HIV risk factors that differ from cisgender women and transgender populations.

Mental health risks and help-seeking behaviors among young men influence the prevention and treatment of HIV. Mental health issues among young men are marked by several indicators, including higher rates of suicide, conduct disorder, violence, and substance use (Rice, 2018). Men have a greater likelihood of abusing all illicit drugs and are more likely to inject drugs than cisgender women (NIDA, 2020). Men may be more likely to participate in high-risk sexual behaviors, including However, due to traditional conceptions of masculinity, cisgender men may be more likely to perceive help-seeking behaviors as a weakness. Cisgender men remain less likely to seek preventative and tertiary healthcare for mental and physical health ailments than cisgender women (Barbosa, 2019).

Cisgender Women
Globally, young cisgender women are overrepresented in cases of HIV (AmFAR, 2018). Up to 50% of cases of HIV worldwide identify as women, with the majority being under the age of 24 (AmFAR, 2018; Karim, 2020). It is a common misconception that cisgender women are at a low risk for HIV among communities and providers alike (Burns et al., 2023). In the United States, up to 18% of new HIV cases are identified as women (CDC, 2019). Young women have reported risk factors and prevention barriers, including risky sexual behavior, stigma and discrimination, and gender-based violence (Irungu, 2021). Cisgender women are exposed to higher rates of sexual abuse and domestic violence and are more likely to participate in survival sex than men (Li, 2018; CDC, 2017)—the transitional vulnerabilities of young adulthood compound existing risk factors among cisgender women. Despite risk factors and barriers, young cisgender women remain understudies in HIV literature.

Violence toward young cisgender women is an epidemic with diverse population health consequences, as demonstrated in the case of HIV (Li, 2018; CDC, 2014). Globally, 1 in 4 women have reported experiences of Intimate Partner Violence, including physical, sexual, and psychological abuse (Li, 2018). Intimate partner violence is a significant predictor of HIV in women (Li, 2018). Women living with HIV are more likely to report histories of physical and sexual abuse than peers who do not have HIV (CDC, 2014). Women express fear that their partners may have negative reactions if they were to engage in HIV prevention measures, including perceived infidelity (2017). Women aged 18-25 account for nearly half of all cases of STIs and are less likely to seek HPV vaccinations (CDC, 2014). Despite limited literature on HIV risks of young cisgender women, 4 in 5 women who have experienced rape and sexual assault were under the age of 25 (CDC, 2022).

In 2014, the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR) set significant reduction targets among young women through prevention, care, and treatment programs in countries worldwide. Funding sought biological, social, behavioral, and structural interventions in areas where violence toward women is common (Saul, 2018). In addition to heightened risks of contracting HIV, young women face barriers to HIV prevention and treatment. Providers are less likely to

prescribe PreP to at-risk men than women. Additionally, cisgender women living with HIV are more likely to report higher rates of internalized stigma, impacting adherence to prevention and treatment (CDC, 2014). Despite positive attitudes toward PrEP among cisgender women, PreP adherence is notably low (CDC, 2022). Only 10% of women who could benefit from the use of PreP are prescribed (CDC, 2017). PrEP adherence is particularly low among black women (Burns et al., 2019). HIV- specific prevention and treatment measures often exclude consideration of young women. In the United States, adults aged 18-25 are less likely to be insured and have consistently reported lower healthcare utilization than any other age group (CDC, 2017). This is demonstrated in PrEP adherence.

Young cisgender women who have sex with cisgender men carry risks for HIV contraction. Women most often contract HIV through vaginal or anal sex with a man. Men have a lower risk of contracting HIV during heterosexual sex, as HIV is more commonly transmitted through receptive sex. Women who have sex with men are also at greater risk for HPV and other STIs that are associated with susceptibility to HIV (Asavapiriyanont, 2013). Pregnancy introduces additional complications for young adults living with HIV. People aged 18-25 report more unplanned pregnancies than any other age group (Murray et al., 2015). There is evidence to suggest that untreated HIV during pregnancy is associated with a faster progression of the disease and an increased parent mortality rate (Calvert & Ronsam, 2015). HIV in pregnancy is associated with poor outcomes for the child, including transmission from parent to child. Adverse outcomes include stillbirth, miscarriage, and low birth weight (Cerveny, 2021)

Lesbian/Same-gender loving Young Adults

Lesbian/same-gender loving young adults who identify as women are consistently excluded from HIV prevention and treatment discourse. Lesbians/same-gender loving adults are often considered to only be women who have sex with women, leading to perceptions of low-risk behaviors. Exclusion within HIV discourse has prevented this population from targeted interventions in treatment and risk reduction (Manlik, 2019). Perceptions of immunity are not only held by clinicians but also by same-gender loving/lesbian women themselves (Richardson, 2000; Manlik, 2019). Misconceptions of immunity may be notable among young lesbian/same-gender loving adults (Lindley, 2003).

Despite consistent exclusion from HIV discourse, women who have sex with women are at risk of HIV infection. HIV transmission in cisgender female-to-female sexual contact is rare, with few reported cases where discernment of transmission was difficult (Chan et al., 2014). Transmission is still possible through sexual abuse, injection drug use, and the sharing of sex toys or exposure to blood (CDC, 2007; Lewis et al., 2012). In addition, sexual abuse is a concern among sexual minorities. A 2020 nationally representative study suggested that lesbian and bisexual women are three times more likely to experience rape than heterosexual women (Canan et al., 2021). Globally, same-gender loving women are at risk of gender-based violence, heightening HIV risk (Pyra, 2014).

Trans women Young Adults

Younger adults with trans experience are disproportionately affected by HIV. Trans refers to transgender, nonbinary, gender-non-conforming, and gender-expansive populations. About 1% of the total U.S. population identifies as transgender (USA Facts, 2023b). However, in 2019, 2% of new HIV cases were part of the trans population (POZ, 2023). Most research on HIV in the transgender population is focused on trans women (Stutterheim et al., 2021). This is because this population faces a higher HIV burden. The CDC found that among all trans people diagnosed with HIV in 2019, most were those between the ages of 25-34, followed by the 13-24 age group (CDC, 2023a).

Within the trans population, trans women of color are most affected by HIV (CDC, 2021b). From 2019-2020, the CDC National HIV Behavioral Surveillance conducted a study on HIV in transgender women in seven U.S. cities. They recruited 1,608 trans women in Atlanta, GA; Los Angeles, CA; New Orleans, LA; New York City, NY; Philadelphia, PA; San Francisco, CA; and Seattle, WA. 42% of the participants tested positive for HIV, with HIV occurrence higher among American Indian/Alaska Natives, Black/African Americans, Hispanic/Latinas, and participants who reported multiple races (CDC, 2021b). Trans women are reported to have worse treatment outcomes and lower rates of suppression compared to cisgender women and cisgender men (Goldstein, 2020).

Many factors influence the HIV disparity among the younger trans population. Most transmission occurring in this population is the result of condomless sex. Sexual risk factors also include engaging in receptive anal intercourse, other STIs that may damage the mucosal membrane and increase susceptibility to HIV, and agency over condom use stemming from

engagement in sex work or adherence to gender norms that limit bodily autonomy (Poteat et al., 2014). Trans individuals may also be at a higher risk for sexual transmission following gender-affirming genital surgeries and localized inflammation, though research in this area is lacking. Sharing needles is another risk factor as well and can be related to hormone therapy or other substances in resource-limited settings where unused needles are not accessible (POZ, 2023).
Aside from biological and behavioral risk factors, there are systemic issues in the healthcare system that impact the HIV disparity in the younger transgender population. Trans people face barriers to healthcare in general, particularly trans women. Many trans people have reported discrimination by healthcare professionals and being denied treatment due to their gender identity or expression. Past negative encounters in healthcare settings can prevent trans people from seeking care in the future. Fear of mistreatment and denial of care can keep trans people from seeking HIV testing or prevention or from remaining in HIV care. In addition, trans women have higher rates of sexual violence compared to the general population and the overall LGBTQ+ population.

Tragically, trans women are likely to be dismissed or revictimized by the police and are less likely to report sexual assaults or request post-exposure prophylaxis to reduce the risk of HIV after potential exposure (HRA, 2023). When it comes to HIV treatment, many trans people consider gender-affirming hormone therapy to be a greater priority than HIV care. Due to this, it is suggested that HIV care be integrated with gender-affirming care to increase rates of viral suppression and HIV prevention in the trans community (HIV.gov, 2022).

HIV prevention specific to the trans population is lacking. The trans population may not feel represented in general HIV prevention interventions (Poteat, 2017). When it comes to biomedical prevention, there is a disparity in PrEP utilization within the trans community. From the CDC's study on trans women and HIV, it was found that although 92% of the trans women studied had heard of PrEP, only 32% of those women who are at elevated risk for HIV used PrEP (CDC, 2021b). This can be related to the fact that the trans population experiences barriers to medical care in general, so they are less likely to be told about or have access to the medication. Additionally, PrEP is frequently marketed towards cisgender men who have sex with men (MSM), and trans people may not feel represented or feel that PrEP is something for them (Rael, 2018). Along with HIV treatment, many trans people also prioritize gender-affirming medical care and may be concerned that taking PrEP will negatively interact with hormones (Rael, 2018). It is suggested that HIV prevention efforts for the trans population should include behavioral interventions along with services to address structural and socioeconomic factors (Neumann et al., 2017). Additionally, sex education should be comprehensive and include information geared toward trans people, their bodies, and relationships (HRC, 2023).

Trans men Young Adults

There is limited research on HIV in trans men. HIV prevalence among transgender men varies widely depending on the region, socioeconomic factors, access to healthcare, and other variables. It is estimated that these populations face higher rates of HIV compared to the general U.S. population (POZ, 2023). Research indicates that transgender men may face unique challenges related to HIV prevention, including limited access to healthcare, stigma, discrimination, and lack of culturally competent services.

While transgender men are less likely to be at risk of HIV compared to transgender women, studies suggest that HIV prevalence among the trans-men population may be higher than estimated (Human Rights Campaign, 2023). However, accurately assessing HIV prevalence among all transgender people can be challenging due to issues like misgendering and underreporting. The CDC suggests certain risk factors resulting from transphobia and marginalization contribute to such high infection rates within the trans population. These risk factors include higher rates of drug and alcohol use, homelessness, violence, lack of family support, and negative healthcare encounters (CDC, 2024). Essentially, because trans people are living in a society with significant stigma and discrimination, they are pushed into situations that greatly increase their HIV risk and severely limit their ability to get tested or obtain adequate care once living with HIV.

Non-binary/Gender-diverse Young Adults

As of 2021, 1.2 million people identified as non-binary (Wilson & Meyer, 2021). Non-binary refers to people who do not identify as men or women. Young adults are more likely to identify as non-binary than older adults (Brown, 2022). Despite limited information on rates of HIV among non-binary adults and young adults, several risk factors are found to be higher among this population (Lykens et al., 2018). The transitional age of young adulthood is compounded by an increased risk

of mental health issues, intimate partner violence, discrimination in healthcare, and homelessness (Lykens et al., 2018). Health and healthcare needs of young adults who do not identify with a gender binary are significantly understudied. However, the visibility of non-binary individuals is growing in popular culture, social media, and legislation (Lykens et al., 2018). As the population of non-binary individuals grows globally, HIV surveillance, research, and treatment must consider their unique needs. This population remainders under-researched.

HIV and Houselessness

Houselessness is a complex and pressing social issue that affects societies worldwide. Houselessness is defined as a condition in which an individual lacks a fixed or regular residence. According to the U.S. Department of Housing and Urban Development (HUD), houselessness defies a singular definition as it encompasses different forms. For instance, individuals experiencing houselessness may fall into several categories, including those living in shelters, transitional housing, or unsheltered locations such as streets, parks, or abandoned buildings. As a result, measuring the exact number of unhoused people in the United States is challenging. However, according to the most recent data from HUD, in January 2020, approximately 580,466 people in the United States experienced houselessness (HUD, 2020). This number includes individuals residing in shelters and those without shelters. In addition, some demographics are disproportionately impacted by houselessness, including LGBTQ+ youth, young adults, individuals with disabilities, and veterans. Specifically for young adults, about 40 thousand people aged 18-24 were reported to be houseless in 2022, highlighting systematic inequities and vulnerabilities within these populations (HUD, 2022).

In the United States, houselessness remains a significant concern, with profound implications for public health, including the management of HIV/AIDS. Unstable housing and HIV are connected in many ways, with housing instability increasing the challenges of HIV prevention and management. According to Berthaud et al. (2022), people experiencing housing instability have higher rates of HIV and mental health disorders than people with stable housing. For specific populations like young adults, unstable housing increases their vulnerability to HIV transmission through a combination of factors, including social, economic, and behavioral. For example, young adults who are unhoused may face barriers to accessing healthcare services. These barriers may include lack of health insurance coverage, transportation, inability to access PrEP, stigma, and discrimination. Without regular access to quality healthcare, unhoused young adults may not have access to HIV testing, prevention, education, or treatment (Berthaud et al., 2022).

Houselessness can create unique challenges that may impact an individual's ability to adhere to and access HIV services. This includes a struggle to adhere to HIV medication regimens and difficulties attending follow-up appointments due to transportation issues, lack of access to regular healthcare services, food insecurity, and shelter, and challenges in storing medications. Higher rates of risky sexual behaviors are also reported to be higher among unhoused young adults, which can increase their likelihood of HIV infection. These behaviors include condomless sex, injection drug use, and sharing needles. Unhoused young adults may engage in these behaviors as a coping mechanism, a means of survival, or a way to seek social connections within marginalized communities.

Unhoused young adults, particularly those who identify as LGBTQ+, are vulnerable to sexual exploitation and trafficking. This exploitation can involve engaging in high-risk sexual practices without access to protection, increasing their vulnerability to HIV and other sexually transmitted infections (Donaldson & Yentel, 2019). Furthermore, inadequate housing also plays a crucial role in HIV management and care for people living with HIV, including limited access to HIV care such as ART, decreased retention in care, low viral suppression, and increased mortality among unhoused PLWH (Thakarar et al., 2016). People experiencing houselessness are also more likely to engage in injection drug use, increasing their risk for HIV. According to the Centers for Disease Control and Prevention. (2022), one in ten HIV diagnoses are from injection drug use. HIV can survive in a used syringe for up to 42 days, making injection drug use the second riskiest behavior for HIV transmission after receptive anal intercourse (CDC, 2021).

Unhoused young adults may experience mental health challenges, substance use disorders, and traumatic experiences, which can intersect with HIV risk. Substance use, particularly injection drug use, can increase HIV transmission through needle sharing. Mental health problems may also influence the ability to engage in HIV prevention behaviors. Stigma and discrimination further compound this population's vulnerability to HIV. Unhoused young adults face stigma and prejudice, which can prevent them from seeking HIV testing, treatment, and prevention

services, further contributing to their vulnerability to HIV (Padilla et al., 2020).

HIV criminalization laws can disproportionately impact unhoused individuals. Unhoused individuals may face increased interaction with the legal system due to poverty, unstable housing, and engagement in survival activities. Fear of imprisonment may prevent unhoused individuals, particularly young adults, from disclosing their HIV status or seeking HIV testing and care. Specific demographics, such as LGBTQ+, BIPOC unhoused people, and sex workers, may experience more vulnerability to HIV criminalization laws. These individuals face intersecting forms of discrimination and marginalization that may further increase their vulnerability to HIV criminalization and its impact (Rinaldi & Marques, 2020).

Sex Workers

Young adult sex workers are an understudied population. However, sex workers maintain the highest global risk of HIV. A recent analysis of current research suggested that 17% of sex workers in the United States carry an HIV/AIDS diagnosis (Paz-Bailey, 2016). Stigmatization, lack of access to healthcare, intravenous drug use, and high-risk sex are risk factors for HIV contraction and transmission. High-risk sexual behaviors include infrequent condom use, sex under the influence of substances, sex at younger ages, and sex with multiple partners (CDC, 2022). Sex workers are also more likely to engage in intravenous drug use and share needles. This population may also be more likely to deal drugs as a means of survival, engage in drug use with clients, and use drugs as a coping mechanism (Kerr et al., 2016). Despite having a high prevalence of HIV-risk behaviors, sex workers are less likely to receive HIV screenings (Tokar, 2019). Decriminalization of sex work may promote access to the prevention and treatment of HIV. Recent epidemiological modeling suggests that decriminalization of sex work could reduce as much as 33-46% of worldwide HIV cases in the next ten years (Shannon, 2014).

In most countries, including the United States, sex work remains illegal (Karlsson, 2022). United States legislation defines sex work as “the exchange of sexual services, either for money or goods” (Freeman, 2019). Federal law criminalizes sex work involving minors, international sex trafficking, and prostitution near military bases. Legislation of sex work is otherwise determined on a state level. In Nevada, brothels are permitted in small counties with strict regulations (State of Nevada, 2024). Prostitution is illegal in 49 remaining states and is most often classified as a Class A misdemeanor. Punishments for the first offense range from 30-day to 2-year sentences and $250 to $10,000 fines (Freeman, 2019).

Sex work is of particular concern among adults. Young adults are more likely to participate in sex work and participate in high-risk behaviors during sex work than older adults (Ross, 2021). The average age of entry into sex work varies across study populations. However, literature tends to cite the age of entry between 12 and 24 years. A recent study suggested that adults aged 18-24 who participate in sex work are at a higher risk of contracting HIV than any other age group (Ross, 2021). The financial, interpersonal, and health status of young adults may be associated with their disproportionate representation in sex work. Young adults have a larger percentage of mental illness than any other age group and are more likely to engage in drug use (NIMH, 2021). Young adults are also more likely to experience poverty, food insecurity, lack of healthcare, and homelessness than any other adult age group (Freeman, 2019). The primary motivations for selling sex for money and/or resources are houselessness, food insecurity, drug use, mental illness, violence, and abuse (CDC, 2016). Female, male, and transgender sex workers carry a larger global burden of HIV than non-sex workers in low-income, middle-income, and high-income countries. HIV in female sex workers remains the highest out of all gender identities at 10.4% (Shannon, 2018).

Policing, conviction, and arrest of sex workers lead to their marginalization and vulnerability. Criminalized sex workers are more likely to face socioeconomic disadvantages, experience violence, and face barriers to healthcare access (Freeman, 2019). Criminalization perpetuates violence by forcing sex workers to isolated locations and dissuades reports of abuse from clients or police. Black and transgender sex workers disproportionately experience violence and stigmatization. 40% of black and black multi-racial transgender sex workers are subject to harassment, violence, or arrest (Harrison et al., 2020). The promotion of a safe working environment is inclusive of access to condoms and sexual education, access to testing and treatment, and protection from sexual violence (Freeman, 2019).

Existing research on the health of young adult sex workers may be limited by stigmatization and criminalization. This population may fear disclosing their occupation status to providers, leading to less frequent screenings and care. Young adults may have

additional barriers to access to screenings and care. Hesitancy toward disclosure of occupation status in research settings may be an additional impediment to collecting representative data. Studies on the prevalence of HIV also often exclude imprisoned populations, which inherently excludes a percentage of sex workers. In addition, screening and research are necessary to better understand the intersectional identity of young adults who participate in sex work.

Mental Health and Young Adults

Mental health concerns are of increasing relevance in the United States, with mental illness having a disproportionate impact on young adults (NIMH, 2021; CDC, 2021; Adams, 2021). Young adults are faced with unique economic, social, and developmental barriers and facilitators toward wellness. The diagnosis of a chronic illness at a young age can lead to additional financial, social, and emotional taxation. Poor mental health is associated with increased risk behaviors associated with contracting HIV, and HIV is associated with an increased risk of poor mental health (Remien, 2019). Living with HIV during young adulthood may compound existing risk factors for mental health disorders.

Despite significant and rising rates of illness, the demand for intervention is not being met. Recent studies suggest that 36% of adults aged 18-25 experiencing mental health systems are not receiving healthcare needs (Adams, 2022). The National Insitute of Health IMH differentiates mental illness by the categories of Any Mental Illness (AMI) and Severe Mental Illness (SMI). AMI is defined as a diagnosed illness with any range of impact on an individual's daily functioning, while SMI is a diagnosed illness that significantly hinders functioning (NIMH, 2021). According to 2021 reports, young adults aged 18-25 are more likely to experience mental illness in both categories. Anxiety disorders are the most frequently experienced mental illness among young adults (NIMH, 2021). Developmental and social changes within young adulthood are additionally associated with substance use (Cadigan, 2019). There is a significant relationship between the mental health epidemic of young adults and mortality. The CDC reports suicide as the second leading cause of death from ages 15-24 (2021). The COVID-19 pandemic introduced additional stressors for emerging adults, including disruptions in traditional schooling, physically distanced relationships, and economic burdens (Office of the Surgeon General, 2021).

The Surgeon General reports increased rates of psychological distress among youth and young people since the start of the pandemic, including depression, anxiety, and emergency room visits related to suicide attempts (Office of the Surgeon General, 2021). Young adults often experience relationship, financial, and emotional stressors associated with a transitional age (Weissbourd et al., 2023). A recent report from the Harvard Graduate School found that young adults consistently find financial worries, achievement pressure, and a lack of "meaning of purpose" in their lives. The study additionally found a high prevalence of loneliness and a feeling of not belonging to others (Weissbourd et al., 2023). Housing, education, career, and relationship instability in transitional ages may exasperate financial and social stressors (Weissbourd et al., 2023). Money and work are among the top-rated concerns among emerging adults (APA, 2018). Adults aged 19-24 are more likely to experience poverty than any other age group, and this number has consistently grown since 1970 (Hawkins, 2019). Young adults are faced with these significant life decisions and financial stressors at a period in which they are diverging from parental influence (Perlik, 2020).

The HIV-positive community faces unique risk factors for mental health and substance use disorders. Individuals susceptible to HIV may already be experiencing economic and social barriers to mental wellness. Those who have and who are susceptible to HIV are more likely to experience homelessness, substance use, and barriers to healthcare access (Remien, 2019). Individuals living with HIV may experience a loss of social support, experiences of stigmatization, difficulty coping with physical symptoms, and loss of employment. Neurocognitive symptoms of HIV extenuate the difficulty of managing the social burdens of the disease (Smith, 2015). Mental health challenges are a consistent barrier to addressing and treating HIV. Individuals with poor mental health across populations are less likely to engage in care, and those adhering to ART are more likely to engage in negative health behaviors (Haas, 2023).

The financial and social stressors associated with young adulthood compound mental and financial concerns of those with HIV. In addition to carrying an increased risk of HIV, young adults living with HIV are more likely to have comorbid mental health conditions (Bhana, 2021). The significant hormonal, neurocognitive, physical, and social changes during young adulthood are amplified by the experience of a life-threatening and stigmatized sexually transmitted infection. Increased risk behaviors, including intravenous drug use, multiple sex partners, and

decreased condom use, place young adults at higher risk of contracting HIV (CDC, 2023). In addition to the risk of transmission with injection drugs, there is evidence to suggest that drug use may accelerate the progression of HIV (Vetrova, 2021; Piggot, 2020). Despite increased risk behaviors, higher prevalence of HIV, and higher prevalence of mental illness, the mental health of young adults living with HIV remains an understudied concern.

Sexual Health in Young Adults

Young adults are at high risk of poor sexual health in the United States. Sexual health is a fundamental aspect of overall well-being, especially for young adults aged (18-34) in the United States. This age range represents a critical period of development, exploration, and identity formation. However, it is also marked by unique challenges and vulnerabilities that can impact physical, social, and emotional health. Many factors influence sexual health for young adults in the United States, including education and awareness, access to quality and affordable healthcare, and social stigma and norms (Vasilenko, 2022). Access to affordable and confidential healthcare such as contraception, STI testing, and reproductive healthcare is an essential aspect of improving sexual health and well-being for young adults. Yet, Barriers to care, such as lack of insurance and stigma surrounding sexual health services, hinder many young folks from accessing the care they need (Decker et al., 2021).

HIV can have negative effects on sexual health and satisfaction for people living with the virus (shame, stigma, fear, etc.). Likewise, misinformation and misconceptions about sexuality can have damaging effects on the mental health of young adults, including feelings of shame, guilt, anxiety related to their sexual experiences, negative self-image, and impact on their relationships. Sexual education plays a vital role in empowering young adults to make better decisions regarding their sexual health. However, the quality and acceptability of sexual health education varies across states, leaving many young adults with inadequate knowledge about safe sexual practices for STI prevention (such as condom use, PrEP, and consent) and the resources they need to navigate their health.

According to the National Conference of State Legislature (2023), some states still mandate comprehensive sexual education that discusses topics such as contraception, STI prevention, and healthy relationships. At the same time, other states emphasize abstinence-only, which may neglect important information about unwanted pregnancies and ways to prevent STIs (such as using condoms and PrEP for HIV). Consequently, in states without mandates, many factors, such as lack of standardized curricula, varying teacher training, and cultural or religious reasons, continue to negatively impact sexual education initiatives (NCSL, 2023; Santelli et al., 2017). In specific communities, particularly underserved communities, the lack of access to sexual educational programs and resources required to deliver comprehensive sexual education prevents young adults from seeking information and support related to their sexual health (Philip et al., 2020). Without access to adequate and accurate information on sexual health, young adults are misinformed about STI transmission and the use of preventative tools. This knowledge gap can lead to young adults engaging in risky sexual behaviors, including condomless sex, having multiple sexual partners, and the use of substances during sexual activity, which can contribute to higher rates of unintended pregnancies and increased vulnerability to HIV (Philip et al., 2020).

HIV Policy

The U.S. government has implemented various policies and initiatives to combat HIV/AIDS among young adults. "The Ending the HIV Epidemic: A Plan for America" initiative aims to reduce new HIV infections by 90% by 2030, with a focus on young people. It emphasizes increased access to PrEP, improved testing strategies, and targeted interventions in communities with high HIV burdens (HHS, 2020). The U.S. government has implemented various policies and initiatives to combat HIV/AIDS among young adults. Policy is an essential structural intervention in reducing HIV/AIDS morbidity and mortality. The most recent funding proposal for The Ending the HIV Epidemic: A Plan for America includes $593 million for the fiscal year 2025. The funding is allotted to the Centers for Disease Control and Prevention, Health Resources and Services Administration, Ryan White HIV/AIDS Program, Health Resource and Service Administration's Health Center Program, Indian Health Service, and National Insitute of Health (HHS, 2024).

The White House Office of National AIDS Policy (ONAP), in collaboration with federal partners, implemented a comprehensive plan known as the National HIV/AIDS Strategy (2022-2025) to combat HIV/AIDS in the United States. This comprehensive plan outlines strategic priorities and actions to reduce new HIV infections, improve health outcomes for PLWH, and eliminate disparities in HIV prevention and care. The Strategy aims to expand access to HIV testing, increase linkage to and retention in HIV care,

promote prevention efforts, including the use of PrEP, address social determinants of health that impact HIV outcomes, and prioritize disadvantaged communities such as gay, bisexual, MSM, BIPOC populations, Black women, transgender women, youth aged 13-24 years and people who inject drugs (ONAP, 2023).

Cohesive HIV/AIDS policy began in 1990, following the death of Ryan White. Ryan White was diagnosed with AIDS at the age of 13 after a 1984 blood transfusion. Parents, students, and school faculty rallied against Ryan attending public school. Ryan and his mother garnered international attention as they fought to continue their education. One month after his death in 1990, the Ryan White HIV/AIDS program began to serve as a tool for HIV/AIDS education, treatment, and support. The Health Resource and Service Administration established the program to primarily serve low-income people living with HIV. This comprehensive state program funds local, city, and state organizations that provide treatment and education to providers. Today, over 550,000 people living with AIDS/HIV are being served by the Ryan White Program. Nearly 90% of clients served were virally suppressed, meaning that they could not transmit HIV, in 2022. 3.3 percent (19,000) of clients are between the ages of 13 to 24 years old (HRSA, 2022).

According to the Ryan White HIV/AIDS program, individuals with temporary and unstable housing are less likely to experience viral suppression than those with stable housing (HRSA, 2022). Housing is a significant protective factor in the AIDS/HIV epidemic among young people, as frequent instability increases HIV susceptibility and hastens the progression of the disease (Henwood, 2020). The National HIV/AIDS Strategy for the United States (2022-2024) aspires to decrease housing stability among persons with HIV/AIDS by 50% (T.W. House, 2022). Along with the Ryan White program, the National Strategy seeks to bring together local, county, state, and federal programming to address HIV houselessness. The Centers for Disease Control and Prevention (CDC), the U.S. Department of Housing and Urban Development (HUD), the Office of HIV/AIDS Housing (OHH), and HRAS's HIV/AIDS Bureau have collectively committed to working with the housing goals of the Strategy. Organizations seek to implement preventive efforts among the houseless, detect and cohesively report outbreaks, and establish low-income housing and care linkage (CDC, 2023). Currently, HUD's Housing Opportunities for Persons with AIDS (HOPWA) is the only Federal program dedicated to establishing housing among those living with HIV. HOPWA programs include short-term and long-term residences, as well as rental assistance and community residences.

The criminalization of AIDS/HIV is a prevalent public health concern in the United States. The policy is inclusive of criminalizing actions that may expose someone to HIV, general laws against infectious diseases or STDs that may include HIV, and sentence enhancements for those who commit a crime while having HIV. In 2022, 35 states maintain laws criminalizing HIV. Most commonly, actions leading to transmission are criminalized within HIV-specific legislation. Prosecuted actions are most often inclusive of sexual behavior, blood donations, prostitution, sharing needles, and biting/spitting. In addition, ten states require that HIV status is disclosed to sexual partners (CDC, 2023). The CDC has stated that such legislation is not reflective of current scientific and medical evidence (CDC, 2023). In Ohio, there are six felony statutes against those who know that they are living with HIV. Individuals who do not disclose their HIV+ status before engaging in sexual intercourse face up to 8 years in prison. Despite viral suppression's proven efficacy in preventing transmission through sexual actions, individuals with suppression still face punishment. Those living with HIV additionally face punishment for blood and plasma donation and exposure through bodily fluids such as spitting and biting. (Ohio Rev. Code, 1996). According to the Ohio Health Modernization Movement, 105 of 160 charged HIV cases were due to spitting (2019). Despite this, the CDC cites 0 cases of transmission due to spitting.

Strength & Resilience

Young adults living with HIV face a variety of adversities interpersonally and at neighborhood, community, and policy levels. Among people living with HIV, these adversities are associated with poor health outcomes and health behaviors (Holtzman et al., 2015). Despite adversities, young adults living with HIV exhibit strength through resilience. Resilience is defined as behavioral, functional, social, and cultural resources and capabilities utilized under adverse circumstances (Frederick-Goldsen, 2011). Resilience among HIV survivors may help mitigate the impact of adversities and promote treatment adherence and viral load suppression (Dulin et al., 2018). However, the strengths of young adults living with HIV are under-documented.

Dulin et al. conducted a meta-analysis on health outcomes associated with HIV and resilience (2018). The majority of HIV resilience research focuses on

intrapersonal levels, including coping skills and behavioral traits. However, Dulin suggests the need for implementing a socioecological model of health to understand resilience among people living with HIV. Socioecological models of health include individual, interpersonal, neighborhood, and societal/policy levels. People with HIV do not only draw from internal support but demonstrate resilience through drawing from family and community resources (Dulin et al., 2018). Studies examining multilevel resilience suggest that drawing on social support and self-efficacy in taking medication promotes ART adherence (Kewkwaletswe et al., 2017). Interventions such as HIV/AIDS education, learned coping skills and contact with other young adults living with HIV have been found to decrease personalized stigma and negative self-image among young adults with HIV (Harper, 2014).

Young adults with HIV may be more likely to learn positive coping mechanisms, as they are more likely to seek support for their mental health than older age groups (APA, 2018; Pescosolido, 2021). Young adults are less likely to hold negative thoughts or belief patterns toward mental health disorders and mental health treatment (Weissbourd, 2023). The U.S. National Stigma study measures stigma by three categories: attribution (beliefs around underlying causes of the illness), perceived likelihood of violence (danger to others), and social rejection (desire for social distance). A trend analysis of the U.S. National Stigma study on depression, schizophrenia, and alcohol use disorder reported a decline in stigmatization surrounding mental illness within the past 30 years, with significant improvement among young adults (Pescosolido, 2021). Young adults are more likely to disclose mental health concerns and are more likely to seek mental health treatment than older age groups (APA, 2018). Decreased mental health stigmatization may offer strength in HIV treatment and prevention among young adults.

Conclusion

Young adults are a strong, resilient, and understudied population within HIV literature. HIV prevention and treatment exist in the context of criminalization, stigmatization, inadequate sexual education, and increasing mental health concerns. Among young adults, additional transitional and developmental challenges compound risk factors and/or difficulties living with the disease after diagnosis. The distinctive needs of young adults must be considered to increase overall rates of prevention, screenings, and viral suppression. Much like the general population, the intersectional identities of young adults are intertwined with risk–factors and strengths. Young adults with marginalized identities require diverse and targeted approaches within HIV care. However, adults within sexual, gender, and racial minority groups are often excluded from HIV discourse. The unique needs of young adults must be considered.

Recommended citation: Sheke, S. I., Hetrick, R., Battle-Fisher, M., & Feeling, B. L. (2025). *HIV and Young Adults*. Equitas Health Institute.
The Institute would like to thank Francisco Caro, Sara Heuser, Matthew Elwood, Dr. Teagan Vaughn, Dr. Rhea DeBussy, and Oliver Licking for their comments and suggest

References

ACT UP New York. (2024, May 11). Support act up, donate & get act up gear. Retrieved from https://actupny.com/
American Psychological Association. (2018, October 10). Stress in America: *Generation Z.* https://www.apa.org/news/press/releases/stress/2018/stress-gen-z.pdf
Agarwal-Jans, S. (2020). Timeline: HIV. *Cell, 183*(2), 550. https://doi.org/10.1016/j.cell.2020.09.004
Armenta, B. E., Whitbeck, L. B., & Habecker, P. N. (2016). The Historical Loss Scale: Longitudinal measurement equivalence and prospective links to anxiety among North American Indigenous adolescents. *Cultural Diversity and Ethnic Minority Psychology, 22*(1), 1. https://doi.org/10.1037/cdp0000049
Asavapiriyanont, S. H., Adams, A. D., Schaub, J. P., Nagata, J. M., Park, M. J., Brindis, C. D., & Irwin Jr, C. E. (2022). Young adult anxiety or depressive symptoms and mental health service utilization during the COVID-19 pandemic. *Journal of Adolescent Health, 70*(6), 985-988. https://doi.org/10.1016/j.jadohealth.2022.02.023
Ayala, G., & Spieldenner, A. (2021). HIV is a story first written on the bodies of gay and bisexual men. *American Journal of Public Health, 111*(7), 1240-1242. https://doi.org/10.2105/AJPH.2021.306348
Barbosa, Y. O., Menezes, L. P. L., Santos, J. M. D. J., Cunha, J. O. D., Albuquerque, T. I. P., Araújo, D. D. C., & Santos, A. D. D. (2019). Factors associated with reasons for men not seeking primary health care services. *O Mundo da Saúde, 43*(3), 666-679. https://bvsms.saude.gov.br/bvs/periodicos/mundo_saude_artigos/factors_reasons_primary_care.pdf
Berthaud, V., Johnson, L., Jennings, R., Chandler-Auguste, M., Osijo, A., Baldwin, M. T., & Tabatabai, M. (2022). The effect of homelessness on viral suppression in an underserved metropolitan area of middle Tennessee: Potential implications for ending the HIV epidemic. *BMC Infectious Diseases, 22*(1), 144. https://doi.org/10.1186/s12879-022-07105-y
Bhana, A., Kreniske, P., Pather, A., Abas, M. A., & Mellins, C. A. (2021). Interventions to address the mental health of adolescents and young adults living with or affected by HIV: State of the evidence. *Journal of the International AIDS Society, 24*, e25713. https://doi.org/10.1002/jia2.25713
Bilger, A., Plenn, E., Barg, F. K., Rendle, K. A., Carter, W. B., Lamour-Harrington, A., ... & Dubé, K. (2023). Participant experiences in HIV cure-directed trial with an extended analytical treatment interruption in Philadelphia, United States. *HIV Research & Clinical Practice, 24*(1), 2267825. https://doi.org/10.1080/25787489.2023.2267825
Birdthistle, I., Tanton, C., Tomita, A., de Graaf, K., Schaffnit, S. B., Tanser, F., & Slaymaker, E. (2019). Recent levels and trends in HIV incidence rates among adolescent girls and young women in ten high-prevalence African countries: A systematic review and meta-analysis. *The Lancet Global Health, 7*(11), e1521-e1540. https://doi.org/10.1016/S2214-109X(19)30410-3
Birkett, M., Neray, B., Janulis, P., Phillips, G., & Mustanski, B. (2019). Intersectional identities and HIV: Race and ethnicity drive patterns of sexual mixing. *AIDS and Behavior, 23*, 1452-1459. https://doi.org/10.1007/s10461-018-2270-7
Bingham, A., Shrestha, R. K., Khurana, N., Jacobson, E. U., & Farnham, P. G. (2021). Estimated lifetime HIV-related medical costs in the United States. *Sexually Transmitted Diseases, 48*(4), 299-304. https://doi.org/10.1097/OLQ.0000000000001366
Bowleg, L., & Raj, A. (2012). Shared communities, structural contexts, and HIV risk: Prioritizing the HIV risk and prevention needs of Black heterosexual men. *American Journal of Public Health, 102*(S2), S173-S177. https://doi.org/10.2105/AJPH.2011.300342
Brown, A. (2022, June 7). About 5% of young adults in the U.S. say their gender is different from their sex assigned at birth. *Pew Research Center.* https://www.pewresearch.org
Burns, J. A., Hull, S. J., Inuwa, A., Moriarty, P., & Scott, R. K. (2023). Understanding retention in the HIV pre-exposure prophylaxis cascade among cisgender women. *AIDS Patient Care and STDs, 37*(4), 205-211. https://doi.org/10.1089/apc.2023.0009
Cadigan, J. M., Duckworth, J. C., Parker, M. E., & Lee, C. M. (2019). Influence of developmental social role transitions on young adult substance use. *Current Opinion in Psychology, 30*, 87-91. https://doi.org/10.1016/j.copsyc.2019.03.006
Calvert, C., & Ronsmans, C. (2015). Pregnancy and HIV disease progression: A systematic review and meta-analysis. *Tropical Medicine & International Health, 20*(2), 122-145. https://doi.org/10.1111/tmi.12412
Canan, S. N., Jozkowski, K. N., Wiersma-Mosley, J. D., Bradley, M., & Blunt-Vinti, H. (2021). Differences in lesbian, bisexual, and heterosexual women's experiences of sexual assault and rape in a national US sample. *Journal of Interpersonal Violence, 36*(19-20), 9100-9120. https://doi.org/10.1177/0886260519863725
Carrillo, H., & Fontdevila, J. (2014). Border crossings and shifting sexualities among Mexican gay immigrant men: Beyond monolithic conceptions. *Sexualities, 17*(8), 919-938. https://doi.org/10.1177/1363460714552248
Carrillo, H., & Hoffman, A. (2018). From MSM to heteroflexibilities: Non-exclusive straight male identities and their implications for HIV prevention and health promotion. In *Rethinking MSM, Trans, and other Categories in HIV Prevention* (pp. 105-118). https://doi.org/10.4324/9781315151120
Carrillo, H., & Hoffman, A. (2018). 'Straight with a pinch of bi': The construction of heterosexuality as an elastic category among adult US men. *Sexualities, 21*(1-2), 90-108. https://doi.org/10.1177/1363460716678561
Centers for Disease Control and Prevention. (2024). Fast facts: HIV in the United States. *Centers for Disease Control and Prevention.* https://www.cdc.gov/hiv/data-research/facts-stats/index.html
Centers for Disease Control and Prevention. (2021). Fast facts: HIV in the US by race and ethnicity. *Centers for Disease Control and Prevention.* https://www.cdc.gov/hiv/data-research/facts-stats/race-ethnicity.html
Centers for Disease Control and Prevention. (2022b). Getting tested. *Centers for Disease Control and Prevention.* https://www.cdc.gov/hiv/testing/?CDC_AAref_Val=https://www.cdc.gov/hiv/basics/hiv-testing/getting-tested.html
Centers for Disease Control and Prevention. (2024, May 21). Estimated HIV incidence and prevalence. *Centers for Disease Control and Prevention.* https://www.cdc.gov/hiv-data/nhss/estimated-hiv-incidence-and-prevalence.html
Centers for Disease Control and Prevention. (2024, March 26). HIV testing and youth. *Centers for Disease Control and Prevention.* https://www.cdc.gov/healthyyouth/youth_hiv/hiv-information-and-youth.htm#:~:text=In%20the%20United%20States%2C%2019%25%20of%20new%20HIV,or%20HIV%20do%20not%20know%20they%20have%20it
Centers for Disease Control and Prevention. (2016). HIV risk among adult sex workers in the United States. *Centers for Disease Control and Prevention.* https://stacks.cdc.gov/view/cdc/43177
Centers for Disease Control and Prevention. (2019, November 13). HIV risk and prevention estimates. *Centers for Disease Control and Prevention.* https://www.cdc.gov/hivpartners/php/riskandprevention/?CDC_AAref_Val=https://www.cdc.gov/hiv/risk/estimates/index.html
Centers for Disease Control and Prevention. (2022a). HIV surveillance report. *Centers for Disease Control and Prevention.* https://www.cdc.gov/hiv-data/?CDC_AAref_Val=https://www.cdc.gov/hiv/statistics/overview/index.html
Centers for Disease Control and Prevention. (2020b, September 21). People coinfected with HIV and viral hepatitis. *Centers for Disease Control and Prevention.* https://www.cdc.gov/hepatitis/hcp/populations-settings/hiv.html
Centers for Disease Control and Prevention. (2024). Viral hepatitis among people with HIV. *Centers for Disease Control and Prevention.* https://www.cdc.gov/hepatitis/hcp/populations-settings/hiv.html
Centers for Disease Control and Prevention. (2024). Preventing HIV with PrEP. *Centers for Disease Control and Prevention.* https://www.cdc.gov/hiv/prevention/prep.html
Centers for Disease Control and Prevention. (2024a). Preventing HIV with PrEP. *Centers for Disease Control and Prevention.* https://www.cdc.gov/hiv/prevention/prep.html
Centers for Disease Control and Prevention. (2024). Issue brief: HIV and transgender communities. *Centers for Disease Control and Prevention.* https://www.cdc.gov/hivpartners/php/data-for-impact/?CDC_AAref_Val=https://www.cdc.gov/hiv/policies/data/transgender-issue-brief.html
Centers for Disease Control and Prevention. (2023, April 3). 2021 HIV testing in the United States. *Centers for Disease Control and Prevention.* https://www.cdc.gov/hiv-data/program/?CDC_AAref_Val=https://www.cdc.gov/hiv/library/reports/testing/2021/index.html
Centers for Disease Control and Prevention. (2022). HIV information and youth. *Centers for Disease Control and Prevention.* https://www.cdc.gov/healthyyouth/youth_hiv/hiv-information-and-youth.htm
Centers for Disease Control and Prevention. (2022). Factsheet: HIV and gay and bisexual men. *Centers for Disease Control and Prevention.* https://www.cdc.gov/hiv/data-research/facts-stats/gay-bisexual-men.html
Centers for Disease Control and Prevention. (2021). Pre-exposure prophylaxis for the prevention of HIV infection in the United States. *Centers for Disease Control and Prevention.* https://www.cdc.gov/hiv/pdf/risk/prep/cdc-hiv-prep-guidelines-2021.pdf
Centers for Disease Control and Prevention. (2025). National Center for Health Statistics Mortality Data on CDC Wonder. *Centers for Disease Control and Prevention*. Retrieved from https://wonder.cdc.gov/mcd.html
Cernasev, A., Walker, C., Armstrong, D., & Golden, J. (2021). Changing the PrEP narrative: A call to action to increase PrEP uptake among women. *Women, 1*(2), 120-127. https://doi.org/10.3390/women1020011
Cerveny, L., Murthi, P., & Staud, F. (2021). HIV in pregnancy: Mother-to-child transmission, pharmacotherapy, and toxicity. *Biochimica et Biophysica Acta (BBA)-Molecular Basis of Disease, 1867*(10), 166206. https://doi.org/10.1016/j.bbadis.2021.166206
Chan, S. K., Thornton, L. R., Chronister, K. J., Meyer, J., Wolverton, M., Johnson, C. K., ... & Sullivan, V. (2014). Likely female-to-female sexual transmission of HIV—Texas, 2012. *MMWR Morbidity and Mortality Weekly Report, 63*(10), 209-212. https://www.cdc.gov/MMWr/pdf/wk/mm6310.pdf
Parums, D. V. (2024). Forty years of waiting for prevention and cure of HIV infection—Ongoing challenges and hopes for vaccine development and overcoming antiretroviral drug resistance. *Medical Science Monitor: International Medical Journal of Experimental and Clinical Research, 30*, e944600-1. https://doi.org/10.12659/MSM.944600
Cramer, R. J., Johnson, J. C., Crosby, J. W., Henderson, C. E., La Guardia, A. C., & Stroud, C. H. (2016). Personality, coping, and mental health among lesbian, gay, and bisexual community members. *Personality and Individual Differences, 96*, 272-278. https://doi.org/10.1016/j.paid.2015.10.025
Decker, M. J., Atyam, T. V., Zárate, C. G., et al. (2021). Adolescents' perceived barriers to accessing sexual and reproductive health services in California: A cross-sectional survey. *BMC Health Services Research, 21*, 1263. https://doi.org/10.1186/s12913-021-07278-3
Donaldson, L. P., & Yentel, D. (2019). Affordable housing and housing policy responses to homelessness. In *Homelessness Prevention and Intervention in Social Work: Policies, Programs, and Practices* (pp. 103-122). https://doi.org/10.1007/978-3-030-03727-7_5
Dulin, A. J., Dale, S. K., Earnshaw, V. A., Fava, J. L., Mugavero, M. J., Napravnik, S., ... & Howe, C. J. (2018). Resilience and HIV: A review of the definition and study of resilience. *AIDS Care, 30*(sup5), S6-S17. https://doi.org/10.1080/09540121.2018.1515470
Edwards, Z., Ingold, C. J., & Azmat, C. E. (2020). Zidovudine. https://europepmc.org/article/nbk/nbk554419#free-full-text
Ending the HIV epidemic. (n.d.). *HIV.gov.* https://www.hiv.gov/federal-response/ending-the-hiv-epidemic/overview
Eggleton, J. S., & Nagalli, S. (2023). Highly active antiretroviral therapy (HAART). *Treasure Island, FL.* https://europepmc.org/article/nbk/nbk554533#free-full-text
Fonner, V. A., Dalglish, S. L., Kennedy, C. E., Baggaley, R., O'Reilly, K. R., Koechlin, F. M., & Grant, R. M. (2016). Effectiveness and safety of oral HIV preexposure prophylaxis for all populations. *AIDS, 30*(12), 1973-1983. https://doi.org/10.1097/QAD.0000000000001145
Footer, K. H. A., White, R. H., Park, J. N., Decker, M. R., Lutnick, A., & Sherman, S. G. (2020). Entry to the sex trade and long-term vulnerabilities of female sex workers who enter the sex trade before the age of eighteen. *Journal of Urban Health: Bulletin of the New York Academy of Medicine, 97*(3), 406–417. https://doi.org/10.1007/s11524-019-00410-z
The Foundation for AIDS Research. (2018). Statistics: Women and HIV/AIDS. *The Foundation for AIDS Research.* https://www.amfar.org/about-hiv-aids/statistics-worldwide/
Freeman, J. (2019). Legalization of sex work in the United States: An HIV reduction strategy. *Georgetown Journal of Legal Ethics, 32*, 597.

https://heinonline.org/HOL/LandingPage?handle=hein.journals/
Fredriksen-Goldsen, K. I. (2011). Resilience and disparities among lesbian, gay, bisexual, and transgender older adults. *The Public Policy and Aging Report, 21*(3), 3–7. https://doi.org/10.1093/ppar/21.3.3
Friedman, M. R., Dodge, B., Schick, V., Herbenick, D., Hubach, R. D., Bowling, J., & Reece, M. (2014). From bias to bisexual health disparities: Attitudes toward bisexual men and women in the United States. *LGBT Health, 1*(4), 309-318. https://doi.org/10.1089/lgbt.2014.0005
Friedman, M. R., Wei, C., Klem, M. L., Silvestre, A. J., Markovic, N., & Stall, R. (2014). HIV infection and sexual risk among men who have sex with men and women (MSMW): A systematic review and meta-analysis. *PLOS ONE, 9*(1), e87139. https://doi.org/10.1371/journal.pone.0087139
Galdas, P. M., Cheater, F., & Marshall, P. (2005). Men and health help-seeking behavior: A literature review. *Journal of Advanced Nursing, 49*(6), 616-623. https://doi.org/10.1111/j.1365-2648.2004.03331.x
Office of the Surgeon General. (2023, June 20). *Office of the Surgeon General (OSG). HHS.gov*. https://www.hhs.gov/surgeongeneral/index.html
Goldhammer, H., Krinsky, L., & Keuroghlian, A. S. (2019). Meeting the behavioral health needs of LGBT older adults. *Journal of the American Geriatrics Society, 67*(8), 1565-1570. https://doi.org/10.1111/jgs.15974
Goldstein, D. A., Sarkodie, E., & Hardy, W. D. (2019). Transgender and nontrans patients do not receive statistically different quality primary care at Whitman-Walker Health, 2008–2016. *Transgender Health, 4*(1), 200-208. https://doi.org/10.1089/trgh.2019.0022
Haas, A. D., Lienhard, R., Didden, C., Cornell, M., Folb, N., Boshomane, T. M., ... & Joska, J. A. (2023). Mental health, ART adherence, and viral suppression among adolescents and adults living with HIV in South Africa: A cohort study. *AIDS and Behavior, 27*(6), 1849-1861. https://doi.org/10.1007/s10461-022-03916-x
Hadland, S. E., Yehia, B. R., & Makadon, H. J. (2016). Caring for lesbian, gay, bisexual, transgender, and questioning youth in inclusive and affirmative environments. *Pediatric Clinics, 63*(6), 955-969. https://doi.org/10.1016/j.pcl.2016.07.001
Harcourt, C., Egger, S., & Donovan, B. (2005). Sex work and the law. *Sexual Health, 2*(3), 121-128. https://doi.org/10.1071/SH04042
Harper, G. W., Lemos, D., & Hosek, S. G. (2014). Stigma reduction in adolescents and young adults newly diagnosed with HIV: Findings from the Project ACCEPT intervention. *AIDS Patient Care and STDs, 28*(10), 543–554. https://doi.org/10.1089/apc.2013.0331
Harrison, J., Grant, J., & Herman, J. L. (2012). A gender not listed here: Genderqueers, gender rebels, and otherwise in the National Transgender Discrimination Survey. *LGBTQ Public Policy Journal at the Harvard Kennedy School, 2*(1), 13. https://escholarship.org/uc/item/2zj46213
Hawkins, J. (2019). The rise of young adult poverty in the US: Issue brief. *Young Americans*. https://youngamericans.berkeley.edu/wpcontent/uploads/2020/01/poverty_FINAL_formatted.pdf
Health Resources and Services Administration. (2024). *Who we are: Ryan White HIV/AIDS Program*. Retrieved from https://ryanwhite.hrsa.gov/
HIV.gov. (2023, November 15). Post-exposure prophylaxis. *HIV.gov*. https://www.hiv.gov/hiv-basics/hiv-prevention/using-hiv-medication-to-reduce-risk/post-exposure-prophylaxis/
He, Y., Zhou, L., Gao, S., Yin, T., Tu, Y., Rayford, R., & Hu, M. (2018). Development and validation of a sensitive LC–MS/MS method for simultaneous determination of eight tyrosine kinase inhibitors and its application in mice pharmacokinetic studies. *Journal of Pharmaceutical and Biomedical Analysis, 148*, 65-72. https://doi.org/10.1016/j.jpba.2017.09.013
Henwood, B. F., Rhoades, H., Redline, B., Dzubur, E., & Wenzel, S. (2020). Risk behavior and access to HIV/AIDS prevention services among formerly homeless young adults living in housing programs. *AIDS Care, 32*(11), 1457-1461. https://doi.org/10.1080/09540121.2019.1699643
POZ Focus. (2024). HIV and transgender people. *POZ*. https://www.poz.com/basics/hiv-basics/hiv-transgender-people
Human Rights Campaign. (2024). HIV & AIDS. *Human Rights Campaign*. https://www.hrc.org/resources/hiv-aids
Hoenigl, M., Chaillon, A., Morris, S. R., & Little, S. J. (2016). HIV infection rates and risk behavior among young men undergoing community-based testing in San Diego. *Scientific Reports, 6*(1), 25927. https://doi.org/10.1038/srep25927
Hojilla, J. C., Hurley, L. B., Marcus, J. L., Silverberg, M. J., Skarbinski, J., Satre, D. D., & Volk, J. E. (2021). Characterization of HIV preexposure prophylaxis use behaviors and HIV incidence among US adults in an integrated health care system. *JAMA Network Open, 4*(8), e2122692. https://doi.org/10.1001/jamanetworkopen.2021.22692
Holtzman, C. W., Brady, K. A., & Yehia, B. R. (2015). Retention in care and medication adherence: Current challenges to antiretroviral therapy success. *Drugs, 75*, 445-454. https://doi.org/10.1007/s40265-015-0373-2
Hoots, B. E., Xu, L., Kariisa, M., Wilson, N. O., Rudd, R. A., Scholl, L., ... & Seth, P. (2018). 2018 annual surveillance report of drug-related risks and outcomes--United States. https://doi.org/10.1007/s40265-015-0373-2
Holmes, C. B., Rabkin, M., Ford, N., Preko, P., Rosen, S., Ellman, T., & Ehrenkranz, P. (2020). Tailored HIV programmes and universal health coverage. *Bulletin of the World Health Organization, 98*(2), 87–94. https://doi.org/10.2471/BLT.18.223495
Human Rights Campaign. (2023). Transgender people and HIV: What we know. *Human Rights Campaign*. https://www.hrc.org/resources/transgender-people-and-hiv-what-we-know
James, T. G., & Ryan, S. J. (2018). HIV knowledge mediates the relationship between HIV testing history and stigma in college students. *Journal of American College Health, 66*(7), 561-569. https://doi.org/10.1080/07448481.2018.1432623
John, S. A., Quinn, K. G., Pleuhs, B., Walsh, J. L., & Petroll, A. E. (2020). HIV post-exposure prophylaxis (PEP) awareness and non-occupational PEP (nPEP) prescribing history among US healthcare providers. *AIDS and Behavior, 24*, 3124-3131. https://doi.org/10.1007/s10461-020-02866-6
Karim, Q. A., Havlir, D., & Phanuphak, N. (2020). Putting women in the centre of the global HIV response is key to achieving epidemic control. *African Journal of Reproduction and Gynaecological Endoscopy, 23*(3), e25473. https://doi.org/10.1002/jia2.25473
Karlsson, H. (2022). Sex work policy worldwide: A scoping review. *Sexuality & Culture, 26*(6), 2288-2310. https://doi.org/10.1007/s12119-022-09983-5
Kaiser Family Foundation. (2022). HIV testing in the United States. *Kaiser Family Foundation*. https://www.kff.org/hivaids/fact-sheet/hiv-testing-in-the-united-states/
Karon, J. M., Fleming, P. L., Steketee, R. W., & De Cock, K. M. (2001). HIV in the United States at the turn of the century: An epidemic in transition. *American Journal of Public Health, 91*(7), 1060. https://doi.org/10.2105/ajph.91.7.1060
Koenig, L. J., Hoyer, D., Purcell, D. W., Zaza, S., & Mermin, J. (2016). Young people and HIV: A call to action. *American Journal of Public Health, 106*(3), 402-405. https://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2015.302979
Kekwaletswe, C. T., Jordaan, E., Nkosi, S., & Morojele, N. K. (2017). Social support and the mediating roles of alcohol use and adherence self-efficacy on antiretroviral therapy (ART) adherence among ART recipients in Gauteng, South Africa. *AIDS and Behavior, 21*, 1846-1856. https://doi.org/10.1007/s10461-016-1595-3
Kerr, T., Shannon, K., Ti, L., Strathdee, S., Hayashi, K., Nguyen, P., Montaner, J., & Wood, E. (2016). Sex work and HIV incidence among people who inject drugs. *AIDS (London, England), 30*(4), 627–634. https://doi.org/10.1097/QAD.0000000000000948
Kolata, G. (1987, October 28). Boy's 1969 death suggests AIDS invaded U.S. several times. *The New York Times*, A15. https://www.nytimes.com/1987/10/28/us/boy-s-1969-death-suggests-aids-invaded-us-several-times.html
Kou, N., Djiometio, J. N., Agha, A., Tynan, A. M., & Antoniou, T. (2017). Examining the health and health service utilization of heterosexual men with HIV: A community-informed scoping review. *AIDS Care, 29*(5), 552-558. https://doi.org/10.1080/09540121.2016.1224306
Kutnick, A. H., Gwadz, M. V., Cleland, C. M., Leonard, N. R., Freeman, R., Ritchie, A. S., & BCAP Collaborative Research Team. (2017). It's a process: Reactions to HIV diagnosis and engagement in HIV care among high-risk heterosexuals. *Frontiers in Public Health, 5*, 100. https://doi.org/10.3389/fpubh.2017.00100
Lake, J. E., & Clark, J. L. (2019). Optimizing HIV prevention and care for transgender adults. *AIDS, 33*(3), 363-375. https://doi.org/10.1097/QAD.0000000000002095
Landovitz, R. J., Scott, H., & Deeks, S. G. (2023). Prevention, treatment, and cure of HIV infection. *Nature Reviews Microbiology, 21*(10), 657-670. https://doi.org/10.1038/s41579-023-00914-1
Lee, C. M., Cadigan, J. M., & Rhew, I. C. (2020). Increases in loneliness among young adults during the COVID-19 pandemic and association with increases in mental health problems. *Journal of Adolescent Health, 67*(5), 714-717. https://doi.org/10.1016/j.jadohealth.2020.08.009
Lee, L. M., Karon, J. M., Selik, R., Neal, J. J., & Fleming, P. L. (2001). Survival after AIDS diagnosis in adolescents and adults during the treatment era, United States, 1984-1997. *JAMA: Journal of the American Medical Association, 285*(10), 1308-1315. https://doi.org/10.1001/pubs.JAMA-ISSN-0098-7484-285-10-joc01916
Levy, M. E., Wilton, L., Phillips, G., Glick, S. N., Kuo, I., Brewer, R. A., & Magnus, M. (2014). Understanding structural barriers to accessing HIV testing and prevention services among black men who have sex with men (BMSM) in the United States. *AIDS and Behavior, 18*, 972-996. https://doi.org/10.1007/s10461-014-0719-x
Lewis, R. J., Milletich, R. J., Kelley, M. L., & Woody, A. (2012). Minority stress, substance use, and intimate partner violence among sexual minority women. *Aggression and Violent Behavior, 17*(3), 247-256. https://doi.org/10.1016/j.avb.2012.02.004
Li, Y., Marshall, C. M., Rees, H. C., Nunez, A., Ezeanolue, E. E., & Ehiri, J. E. (2014). Intimate partner violence and HIV infection among women: A systematic review and meta-analysis. *Journal of the International AIDS Society, 17*(1), 18845. https://doi.org/10.7448/IAS.17.1.18845
Lindley, L. L., Nicholson, T. J., Kerby, M. B., & Lu, N. (2003). HIV/STI associated risk behaviors among self-identified lesbian, gay, bisexual, and transgender college students in the United States. *AIDS Education and Prevention, 15*(5), 413-429. https://doi.org/10.1521/aeap.15.6.413.24039
Liszewski, W., Peebles, J. K., Yeung, H., & Arron, S. (2018). Persons of nonbinary gender - Awareness, visibility, and health disparities. *The New England Journal of Medicine, 379*(25), 2391–2393. https://doi.org/10.1056/NEJMp1812005
Lorenzetti, L., Dinh, N., van der Straten, A., Fonner, V., Ridgeway, K., Rodolph, M., & Baggaley, R. (2023). Systematic review of the values and preferences regarding the use of injectable pre-exposure prophylaxis to prevent HIV acquisition. *Journal of the International AIDS Society, 26*, e26107. https://doi.org/10.1002/jia2.26107
Roberts, C., Shiman, L. J., Dowling, E. A., Tantay, L., Masdea, J., Pierre, J., & Bedell, J. (2020). LGBTQ+ students of colour and their experiences and needs in sexual health education: "You belong here just as everybody else." *Sex Education, 20*(3), 267-282. https://doi.org/10.1080/14681811.2019.1648248
Lutete, P., Matthews, D. W., Sabounchi, N. S., Paige, M. Q., Lounsbury, D. W., Rodriguez, N., & Frye, V. (2022). Intersectional stigma and prevention among gay, bisexual, and same-gender–loving men in New York City, 2020: System dynamics models. *American Journal of Public Health, 112*(S4), S444-S451. https://doi.org/10.2105/AJPH.2022.306725
Manlik, K. (2022). Allies or at-risk subjects? Sexual minority women and the “problem” of HIV in *Lesbians on the Loose*. *Feminist Media Studies, 22*(1), 104–119. https://doi.org/10.1080/14680777.2020.1837907
Mental Health Services Administration. (2021). *Key substance use and mental health indicators in the United States: Results from the 2020 national survey on drug use and health* (HHS Publication No. PEP21-07-01-003, NSDUH Series H-56). Substance Abuse and Mental Health Services Administration. https://www.samhsa.gov/data
National Institute of Mental Health. (2024). *Mental illness*. U.S. Department of Health and Human Services. https://www.nimh.nih.gov/health/statistics/mental-illness
Merriam-Webster. (2023). Cisgender definition & meaning. Merriam-Webster. https://www.merriam-webster.com/dictionary/cisgender
Merson, M. H., O'Malley, J., Serwadda, D., & Apisuk, C. (2008). The history and challenge of HIV prevention. *The Lancet, 372*(9637), 475-488. https://doi.org/10.1016/S0140-6736(08)60884-3
Meyer, I. H. (1995). Minority stress and mental health in gay men. *Journal of Health and Social Behavior, 38*, 38-56. https://www.jstor.org/stable/2137286
Middleton, J. (n.d.). Heterosexual men - 2018. *Division of Prevention Science*. Retrieved May 22, 2024, from https://prevention.ucsf.edu/research-project/heterosexual-men-2018
Middle East and North Africa. (n.d.). *UNAIDS*. https://thepath.unaids.org/wp-content/themes/unaids2023/assets/files/regional_fs_east_north_africa.pdf
Morrow, K. M., & Allsworth, J. E. (2000). Sexual risk in lesbians and bisexual women. *Journal of the Gay and Lesbian Medical Association, 4*, 159-165. https://doi.org/10.1023/A:1026507721501

Equitas Health Institute

Moyo, E., Moyo, P., Murewanhema, G., Mhango, M., Chitungo, I., & Dzinamarira, T. (2023). Key populations and Sub-Saharan Africa's HIV response. *Frontiers in Public Health, 11*, 1079990. https://doi.org/10.3389/fpubh.2023.1079990
Movement Advancement Project. (2016, September). *Invisible majority: The disparities facing bisexual people and how to remedy them*. https://www.lgbtmap.org/policy-and-issue-analysis/invisible-majority
Mustanski, B. S., Newcomb, M. E., Du Bois, S. N., Garcia, S. C., & Grov, C. (2011). HIV in young men who have sex with men: A review of epidemiology, risk and protective factors, and interventions. *Journal of Sex Research, 48*(2-3), 218-253. https://doi.org/10.1080/00224499.2011.558645
Nasira A. Sitar. (2024). The Role of Social Media Campaigns in Promoting HIV Awareness and Prevention Behaviors among College Youths. Research Output Journal of Public Health and Medicine 4(2):29-32. https://doi.org/10.59298/ROJPHM/2024/422932
National Conference of State Legislatures. (n.d.). Summary state policies on sex education in schools. Retrieved from https://www.ncsl.org/health/state-policies-on-sex-education-in-schools
National Institutes of Health. (2024). *Research toward HIV cure*. Retrieved from https://www.oar.nih.gov/hiv-policy-and-research/research-priorities-overview/research-toward-hiv-cure
Neilan, A. M., Dunville, R., Ocfemia, M. C. B., Salomon, J. A., Francke, J. A., Bulteel, A. J., & Ciaranello, A. L. (2018). The optimal age for screening adolescents and young adults without identified risk factors for HIV. *Journal of Adolescent Health, 62*(1), 22-28. https://doi.org/10.1016/j.jadohealth.2017.08.028
Negin, J., Aspin, C., Gadsden, T., & Reading, C. (2015). HIV among Indigenous peoples: A review of the literature on HIV-related behavior since the beginning of the epidemic. *AIDS and Behavior, 19*, 1720-1734. https://doi.org/10.1007/s10461-015-1023-0
Neumann, M. S., Finlayson, T. J., Pitts, N. L., & Keatley, J. (2017). Comprehensive HIV prevention for transgender persons. *American Journal of Public Health, 107*(2), 207-212. https://doi.org/10.2105/AJPH.2016.303509
National Institute on Drug Abuse. (2020, April 1). *Sex and gender differences in substance use*. Retrieved August 22, 2024, from https://nida.nih.gov/publications/research-reports/substance-use-in-women/sex-gender-differences-in-substance-use
Nguyen, N., Lane, B., Golub, S. A., Chastain, C., Zucker, J., King, K., Terry, M., 2nd, Burdge, J., Carnevale, C., Muscarella, A., Castor, D., Kutner, B., & Meyers, K. (2024). Long-acting injectable ART to advance health equity: A descriptive analysis of US clinic perspectives on barriers, needed support, and program goals for implementation from applications to the ALAI UP Project. *Journal of the International AIDS Society, 27*(Suppl 1), e26282. https://doi.org/10.1002/jia2.26282
Ohio Health Modernization Movement. (2024). *Modernizing unjust HIV laws*. Retrieved from https://ohmodernizenow.or/
Office of Infectious Disease and HIV/AIDS Policy (OIDP). (2023b, May 26). Vaccines and immunizations. *HHS.gov*. https://www.hhs.gov/vaccines/index.html
Okumu, E., Jolly, D. H., Alston, L. M., Eley, N. T., Laws, M., & MacQueen, K. M. (2017). Relationship between human immunodeficiency virus (HIV) knowledge, HIV-related stigma, and HIV testing among young Black adults in a southeastern city. *Frontiers in Public Health, 5*, 47. https://doi.org/10.3389/fpubh.2017.00047
Operario, D., Gamarel, K. E., Iwamoto, M., Suzuki, S., Suico, S., Darbes, L., & Nemoto, T. (2017). Couples-focused prevention program to reduce HIV risk among transgender women and their primary male partners: Feasibility and promise of the couples HIV intervention program. *AIDS and Behavior, 21*, 2452-2463. https://doi.org/10.1007/s10461-016-1462-2
Padilla, M., Frazier, E. L., Carree, T., Luke Shouse, R., & Fagan, J. (2020). Mental health, substance use, and HIV risk behaviors among HIV-positive adults who experienced homelessness in the United States—Medical Monitoring Project, 2009–2015. *AIDS Care, 32*(5), 594-599. https://doi.org/10.1080/09540121.2019.1683808
Parums, D. V. (2024). Forty years of waiting for prevention and cure of HIV infection—Ongoing challenges and hopes for vaccine development and overcoming antiretroviral drug resistance. *Medical Science Monitor: International Medical Journal of Experimental and Clinical Research, 30*, e944600-1. https://doi.org/10.12659/MSM.944600
Patel, D., Johnson, C. H., Krueger, A., Maciak, B., Belcher, L., Harris, N., & DiNenno, E. A. (2020). Trends in HIV testing among US adults, aged 18–64 years, 2011–2017. *AIDS and Behavior, 24*, 532-539. https://doi.org/10.1007/s10461-019-02689-0
Patterson, W., Rosenthal, M., & Rajulu, D. T. (2023). Brief report: Trends in HIV mortality in the context of the COVID-19 pandemic. *Journal of Acquired Immune Deficiency Syndromes (1999), 94*(2), 91–94. https://doi.org/10.1097/QAI.0000000000003228
Parczewski, M., & Gökengin, D. (2024). The HIV epidemic in Eastern Europe and Central Asia in difficult times: A story of resilience and change. *Journal of the International AIDS Society, 27*(Suppl 3), e26325. https://doi.org/10.1002/jia2.26325
Paz-Bailey, G., Noble, M., Salo, K., & Tregear, S. J. (2016). Prevalence of HIV among U.S. female sex workers: Systematic review and meta-analysis. *AIDS and Behavior, 20*(10), 2318–2331. https://doi.org/10.1007/s10461-016-1332-y
Perlick, D. A., Hofstein, Y., & Michael, L. A. (2010). Barriers to mental health service use in young adulthood. In *Young adult mental health* (pp. 195-205). https://books.google.com/barriers+to+mental+health+service+use+in+young+adulthood
Pescosolido, B. A., Halpern-Manners, A., Luo, L., & Perry, B. (2021). Trends in public stigma of mental illness in the U.S., 1996-2018. *JAMA Network Open, 4*(12), e2140202-e2140202. Doi:10.1001/jamanetworkopen.2021.40202
Piggott, D. A., Bandeen-Roche, K., Mehta, S. H., Brown, T. T., Yang, H., Walston, J. D., ... & Kirk, G. D. (2020). Frailty transitions, inflammation, and mortality among persons aging with HIV infection and injection drug use. *AIDS (London, England), 34*(8), 1217. https://doi.org/10.1097/QAD.0000000000002527
Phillips, G., McCuskey, D. J., Felt, D., Curry, C. W., Ruprecht, M. M., Wang, X., & Beach, L. B. (2020). Association of HIV education with HIV testing and sexual risk behaviors among U.S. youth, 2009–2017: Disparities between sexual minority and sexual majority youth. *Prevention Science, 21*, 898-907. https://doi.org/10.1007/s11121-020-01153-z
Poteat, T. C., & Baral, S. (2020). Celebrating the struggle against homophobia, transphobia and biphobia as central to ending HIV transmission by 2030. *Journal of the International AIDS Society, 23*(5). https://doi.org/10.1002/jia2.25532
Poteat, T., Malik, M., Scheim, A., & Elliott, A. (2017). HIV prevention among transgender populations: Knowledge gaps and evidence for action. *Current HIV/AIDS Reports, 14*, 141-152. https://doi.org/10.1007/s11904-017-0360-1
Poteat, T. C., & Baral, S. (2020). Celebrating the struggle against homophobia, transphobia and biphobia as central to ending HIV transmission by 2030. *African Journal of Reproductive and Gynecological Endoscopy, 23*(5), e25532. https://doi.org/10.1002/jia2.25532
Prevention Access Campaign. (n.d.). *Our history*. Retrieved from https://preventionaccess.org/about-2/
Quinn, K. G., Dickson-Gomez, J., Craig, A., John, S. A., & Walsh, J. L. (2023). Intersectional discrimination and PrEP use among young Black sexual minority individuals: The importance of Black LGBTQ communities and social support. *AIDS and Behavior, 27*(1), 290-302. https://doi.org/10.1007/s10461-022-03763
Rael, C. T., Martinez, M., Giguere, R., Bockting, W., MacCrate, C., Mellman, W., ... & Carballo-Diéguez, A. (2018). Barriers and facilitators to oral PrEP use among transgender women in New York City. *AIDS and Behavior, 22*, 3627-3636. https://doi.org/10.1007/s10461-018-2102-9
Raifman, J., Beyrer, C., & Arrington-Sanders, R. (2018). HIV education and sexual risk behaviors among young men who have sex with men. *LGBT Health, 5*(2), 131-138. https://doi.org/10.1089/lgbt.2017.0076
Rask, G. (2020). When did the HIV infection start? Story of the first few patients. *Journal of the Indian Medical Association, 118*(08). Retrieved from https://www.researchgate.net/profile/Rudrajit-Paul-3/publication/344714446_The_History_of_HIV/links/5f8b18dd458515b7cf85a618/The-History-of-HIV.pdf
Rawlins-Pilgrim, S., Wheelock, A., & Taylor, J. (2020). PrEP in student health services—a call to action. *Journal of General Internal Medicine, 35*(12), 3689-3690. https://doi.org/10.1007/s11606-020-05774-6
Regulations-Prostitution. (n.d.). Retrieved May 22, 2024, from *dpbh.nv.gov*: https://dpbh.nv.gov/uploadedFiles/dpbh.nv.gov/content/Programs/STD/dta/Providers/Regulations%20-%20Prostitution.pdf
Remien, R. H., Stirratt, M. J., Nguyen, N., Robbins, R. N., Pala, A. N., & Mellins, C. A. (2019). Mental health and HIV/AIDS: The need for an integrated response. *AIDS, 33*(9), 1411-1420. Doi: 10.1097/QAD.0000000000002227
Rice, S. M., Purcell, R., & McGorry, P. D. (2018). Adolescent and young adult male mental health: Transforming system failures into proactive models of engagement. *Journal of Adolescent Health, 62*(3), S9-S17. https://doi.org/10.1016/j.jadohealth.2017.07.024
Richardson, D. (2000). The social construction of immunity: HIV risk perception and prevention among lesbians and bisexual women. *Culture, Health & Sexuality, 2*(1), 33-49. https://doi.org/10.1080/136910500300859
Rinaldi, J., & Marques, O. (2020). Criminalization and capture strategies in the HIV/AIDS assemblage. *International Journal of Prisoner Health, 16*(4), 359-372. https://doi.org/10.1108/IJPH-04-2019-0024
Roberts, C., Shiman, L. J., Dowling, E. A., Tantay, L., Masdea, J., Pierre, J., & Bedell, J. (2020). LGBTQ+ students of colour and their experiences and needs in sexual health education: 'You belong here just as everybody else'. Sex Education, 20(3), 267-282. https://doi.org/10.1080/14681811.2019.1648248
Roomaney, R. A., van Wyk, B., & Pillay-van Wyk, V. (2022). Aging with HIV: Increased risk of HIV comorbidities in older adults. *International Journal of Environmental Research and Public Health, 19*(4), 2359. https://doi.org/10.3390/ijerph19042359
Ross, L. E., Sterling, A., Dobinson, C., Logie, C. H., & D'Souza, S. (2021). Access to sexual and reproductive health care among young adult sex workers in Toronto, Ontario: A mixed-methods study. *CMAJ Open, 9*(2), E482–E490. https://doi.org/10.9778/cmajo.20200049
Santelli, J. S., Kantor, L. M., Grilo, S. A., Speizer, I. S., Lindberg, L. D., Heitel, J., ... & Ott, M. A. (2017). Abstinence-only-until-marriage: An updated review of US policies and programs and their impact. *Journal of Adolescent Health, 61*(3), 273-280. https://doi.org/10.1016/j.jadohealth.2017.05.031
Saul, J., Bachman, G., Allen, S., Toiv, N. F., Cooney, C., & Beamon, T. A. (2018). The DREAMS core package of interventions: A comprehensive approach to preventing HIV among adolescent girls and young women. *PloS One, 13*(12), e0208167. https://doi.org/10.1371/journal.pone.0208167
Schneck, K., & Dissell, R. (2024, March 13). "'Like I Was Basically Poison': Ohio HIV Laws Can Land People in Prison." *The Marshall Project*. Retrieved from https://www.themarshallproject.org/2024/03/13/hiv-laws-ohio-prison
Schriek, A. I., Aldon, Y. L. T., van Gils, M. J., & de Taeye, S. W. (2023). Next-generation bNAbs for HIV-1 cure strategies. *Antiviral Research, 105788*. https://doi.org/10.1016/j.antiviral.2023.105788
Smit, P. J., Brady, M., Carter, M., Fernandes, R., Lamore, L., Meulbroek, M., ... & Thompson, M. (2012). HIV-related stigma within communities of gay men: A literature review. *AIDS Care, 24*(4), 405-412. https://doi.org/10.1080/09540121.2011.613910
Smith, R., & Wilkins, M. (2015). Perinatally acquired HIV infection: Long-term neuropsychological consequences and challenges ahead. *Child Neuropsychology, 21*(2), 234-268. https://doi.org/10.1080/09297049.2014.898744
Shannon, K., Crago, A. L., Baral, S. D., Bekker, L. G., Kerrigan, D., Decker, M. R., Poteat, T., Wirtz, A. L., Weir, B., Boily, M. C., Butler, J., Strathdee, S. A., & Beyrer, C. (2018). The global response and unmet actions for HIV and sex workers. *Lancet (London, England), 392*(10148), 698-710. https://doi.org/10.1016/S0140-6736(18)31439-9
Shannon, K., Strathdee, S. A., Goldenberg, S. M., Duff, P., Mwangi, P., Rusakova, M., Reza-Paul, S., Lau, J., Deering, K., Pickles, M. R., & Boily, M. C. (2015). Global epidemiology of HIV among female sex workers: Influence of structural determinants. *Lancet (London, England), 385*(9962), 55-71. https://doi.org/10.1016/S0140-6736(14)60931-4

Smit, P. J., Brady, M., Carter, M., Fernandes, R., Lamore, L., Meulbroek, M., ... & Thompson, M. (2012). HIV-related stigma within communities of gay men: A literature review. *AIDS Care, 24*(4), 405-412. https://doi.org/10.1080/09540121.2011.613910

Stanton, A. M., Wirtz, M. R., Perlson, J. E., & Batchelder, A. W. (2022). "Its how we get to know each other": Substance use, connectedness, and sexual activity among men who have sex with men who are living with HIV. *BMC Public Health, 22*(1), 425. https://doi.org/10.1186/s12889-022-12778-w
Stutterheim, S. E., van Dijk, M., Wang, H., & Jonas, K. J. (2021). The worldwide burden of HIV in transgender individuals: An updated systematic review and meta-analysis. *PloS One, 16*(12), e0260063. https://doi.org/10.1371/journal.pone.0260063
Swathisha, P., & Deb, S. (2022). What young people have to say about sex work? An exploration. *Sexologies, 31*(4), 294-301. https://doi.org/10.1016/j.sexol.2022.09.004
Tao, X., Ghanem, K. G., Page, K. R., Gilliams, E., & Tudden. (n.d.). *International Journal of STD &*

AIDS, 31(2), 142-149. https://doi.org/10.1177/0956462419886772
Tokar, A., Broerse, J. E. W., Blanchard, J., & Roura, M. (2018). HIV testing and counseling among female sex workers: A systematic literature review. *AIDS and Behavior, 22*(8), 2435–2457. https://doi.org/10.1007/s10461-018-2043-3
The White House. (2024). *National HIV/AIDS Strategy for the United States 2022–2025*. https://www.whitehouse.gov/wp-content/uploads/2021/11/National-HIV-AIDS-Strategy.pdf
The Ohio Legislature. (2024, March). Section 2927.13: *Selling or donating contaminated blood. Ohio Revised Code*. Retrieved from https://codes.ohio.gov/ohio-revised-code/section-2927.13#:~:text=Section%202927.13%20%7C%20Selling%20or%20donating%20contaminated%20blood,&text=(B)%20Whoever%20violates%20this%20section,felony%20of%20the%20fourth%20degree.
Touger, R., & Wood, B. R. (2019). A review of telehealth innovations for HIV pre-exposure prophylaxis (PrEP). *Current HIV/AIDS Reports, 16*, 113-119. https://doi.org/10.1007/s11904-019-00430-z
The White House Office of National AIDS Policy. (2021). National HIV/AIDS strategy for the United States (2022-2025). Retrieved from https://files.hiv.gov/s3fs-public/NHAS-2022-2025.pdf
The U.S. Department of Housing and Urban Development. (2023). *The 2023 Annual Homelessness Assessment Report (AHAR) to Congress*. Retrieved from https://www.huduser.gov/portal/sites/default/files/pdf/2023-AHAR-Part-1.pdf
Thakarar, K., Morgan, J. R., Gaeta, J. M., Hohl, C., & Drainoni, M. L. (2016). Homelessness, HIV, and incomplete viral suppression. *Journal of Health Care for the Poor and Underserved, 27*(1), 145. Https://doi.org/10.1353/hpu.2016.0020
Williams Institute. (2023, July 10). How many adults and youth identify as transgender in the United States? *Loyal*. Retrieved from https://williamsinstitute.law.ucla.edu/publications/trans-adults-united-states/
U.S. Department of Health and Human Services. (2023). Key statistics about HIV among American Indian/Alaska Native people. *Indian Health Service*. Retrieved from https://www.ihs.gov/hivaids/stats/
U.S. Department of Health and Human Services. (2024, March 6). Long-acting HIV treatment benefits adults with barriers to daily pill taking and adolescents with suppressed HIV. *National Institutes of Health*. Retrieved from https://www.nih.gov/news-events/news-releases/long-acting-hiv-treatment-benefits-adults-barriers-daily-pill-taking-adolescents-suppressed-hiv#:~:text=Long%2Dacting%2C%20injectable%20antiretroviral%20therapy,at%20the%202024%20Conference%20on
U.S. Department of State. (n.d.). *The Global Fund to Fight AIDS, Tuberculosis and Malaria*. Retrieved from https://www.state.gov/the-global-fund-to-fight-aids-tuberculosis-and-malaria/
U.S. Food and Drug Administration. (2021). FDA approves first injectable treatment for HIV pre-exposure prevention. *FDA*. Retrieved from https://www.fda.gov/news-events/press-announcements/fda-approves-first-injectable-treatment-hiv-pre-exposure-prevention
U.S. Department of Health and Human Services. (n.d.-a). HIV and adolescents and young adults. *National Institutes of Health*. Retrieved from https://hivinfo.nih.gov/understanding-hiv/fact-sheets/hiv-and-adolescents-and-young-adults
Vaillant, A. A. J., & Naik, R. (2023). HIV-1 associated opportunistic infections. In *StatPearls* [Internet]. StatPearls Publishing. Retrieved from https://www.statpearls.com
Vasilenko, S. A. (2022). Sexual behavior and health from adolescence to adulthood: Illustrative examples of 25 years of research from Add Health. *Journal of Adolescent Health, 71*(6), S24-S31. https://doi.org/10.1016/j.jadohealth.2022.07.004
Vetrova, M. V., Cheng, D. M., Bendiks, S., Gnatienko, N., Lloyd-Travaglini, C., Jiang, W., & Lunze, K. (2021). HIV and substance use stigma, intersectional stigma, and healthcare among HIV-positive PWID in Russia. *AIDS and Behavior*, 1-12. https://doi.org/10.1007/s10461-021-03572-1
Weissbourd, R., Batanova, M., Laski, M., McIntyre, J., Torres, E., & Balisciano, N. (2023). Caring for the caregivers: The critical link between parent and teen mental health. *Harvard Graduate School*. Retrieved from https://static1.squarespace.com/static/5b7c56e255b02c683659fe43/t/64ac08af6f3dc8123d9b3c45/1688996016873/Caring+for+the+Caregivers_final.pdf
Weitzer, R. (2012). *Legalizing prostitution: From illicit vice to lawful business*. NYU Press. https://doi.org/10.1177/0093854813497715
Wilson, B., & Meyer, I. (2021). *NONBINARY LGBTQ adults in the United States*. Williams Institute. Retrieved from https://williamsinstitute.law.ucla.edu/wp-content/uploads/Nonbinary-LGBTQ-Adults-Jun-2021.pdf
Williams Institute UCLA. (2022). *HIV criminalization in the United States*. Retrieved from https://williamsinstitute.law.ucla.edu/visualization/hiv-criminalization
Wong, T., Pharr, J. R., Bungum, T., Coughenour, C., & Lough, N. L. (2019). Effects of peer sexual health education on college campuses: A systematic review. *Health Promotion Practice, 20*(5), 652-666. https://doi.org/10.1177/1524839919848243
World Health Organization. (2024). *HIV and AIDS*. World Health Organization. Retrieved from https://www.who.int/news-room/fact-sheets/detail/hiv-aids

HIV and Young Adults Report: Acronyms (In alphabetical order)

AIDS- Acquired Immunodeficiency Syndrome
AMI- Any Mental Illness
ART- Antiretroviral Therapy
ARTA- America Responds to AIDS
ATI- Analytical Treatment Interruption
AZT- Azidothymidine
BIPOC- Black, Indigenous, People of Color
BnABs- Broadly Neutralizing antibodies
CDC- Centers for Disease Control and Prevention
EHE- Ending the HIV Epidemic
FDA- U.S. Drug and Food Administration
GRID- Gay-related Immune Deficiency
HAART- Highly Active Antiretroviral Therapy
HIV- Human Immunodeficiency Virus
HOPWA- Housing Opportunities for People with Aids
HPV- Human Papillomavirus
HUD- US Department of Housing and Urban Development
IDU- Injection Drug Users
LGBTQ+- Lesbian, Gay, Bisexual, Queer and additional non-conforming gender and sexual identities
MSM- Men who have Sex with Men
ONAP- The White House National AIDS Policy
OHH- Office of HIV/AIDS Housing
PAC- Prevention Access Campaign
PLWH- People Living with HIV
PrEP- Pre-Exposure Prophylaxis
PEP- Post-Exposure Prophylaxis
SMI- Serious Mental Illness
TaSP- Treatment as Prevention
TDF/FTC- Emtricitabine/tenofovir