

Chapter 1

Assessing the Diverse Factors that Influence the Behaviors and Experiences of Gay Men and Other Men Who Have Sex with Men (MSM) Living with HIV in the United States: Implications for Prevention and Improved Health

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Introduction

This chapter provides an historical overview of the HIV epidemic and its impact on the health and lives of gay men and other men who have sex with men in the USA. It explores the wide range of factors that influence the behaviors and experiences of MSM living with HIV infection in the USA at the individual, interpersonal, organizational, community, and broader societal level with implications and recommendations for prevention and improved health.

Socio-historical Contexts of the HIV Epidemic in the United States

In the early 1980s, what came to be known as AIDS was first recognized in the USA as an array of atypical diseases among gay men, with associated immune dysfunction (Avert, 2017; Fenton, 2011). The report described the presence of Pneumocystis

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Carinii Pneumonia (PCP) among five gay men in New York and California. Almost a month after the release of this report, the *New York Times* reported that 41 gay men had been diagnosed with Kaposi's Sarcoma. By the end of 1981, 5–6 new cases of the disease were reported each week (Avert, 2017).

By early 1982, the outbreak had acquired a variety of names including gay-related immune deficiency (GRID) and gay compromise syndrome. By June 1982, 355 cases of Kaposi's Sarcoma and other serious opportunistic infections among previously healthy young individuals had been reported to the Centers for Disease Control and Prevention (CDC) by 20 states and they were not only occurring among gay men. There were a small number of cases among heterosexual men and women and more than half of the identified cases among heterosexuals were linked to shared needles for injection drug use. It was not until July 1982 that the burgeoning epidemic was called the "Acquired Immune Deficiency Syndrome" or AIDS as the disease was no longer solely affecting gay men but also heterosexual men, women, and children (Avert, 2017).

By December 1992, the CDC reported that three heterosexual hemophiliacs had died after developing PCP and other AIDS-related opportunity infections. What these three individuals shared in common was that they had all received a blood transfusion (Avert, 2017). Around the same time, the CDC also received reports of AIDS among a small number of immigrants from Haiti. Medical journals and books started to claim that AIDS originated in Haiti and that Haitians were responsible for the AIDS epidemic in the USA (Avert, 2017). By the end of 1982, based on the groups that were initially impacted by AIDS in the USA, it became known as a disease of the "4H club"—homosexuals, heroin addicts, hemophiliacs, and Haitians (Avert, 2017). From the onset, AIDS was associated with a high level of social marginalization. This form of stigma and discrimination persisted given the unknown context associated with this new and devastating disease at the time in terms of what was causing it, how it was transmitted, as well as how it was linked to gay men and injection drug users—groups that were already highly stigmatized and discriminated against in the USA. This prejudice and lack of information was also reflected in the White House's failed response to the epidemic (Avert, 2017).

By 1985, consensus had been reached that the epidemic was caused by a newly discovered retrovirus, named HIV (Human Immunodeficiency Virus). Thirty years later, HIV/AIDS has become one of the most politicized, feared, and controversial diseases (Avert, 2017) that continues to impact the health and lives of gay men and other MSM in the USA and throughout the world (Fenton, 2011).

Impact of HIV in the USA and Among MSM

Of an estimated 1.2 million people living with HIV infection in the USA, nearly 13% (one in eight individuals) do not know that they are infected (CDC, 2015). The number of individuals living with HIV infection has increased dramatically since the early 1980s as a result of advances in HIV treatment and resulting increases in

life expectancy (CDC, 2013). Overall, the annual number of new HIV infections has remained stable with approximately 50,000 cases observed annually (CDC, 2015). MSM remain the group most heavily impacted by HIV in the USA. Although MSM represent approximately 4% of the male population in the USA, they accounted for more than three-fourths (78%) of new HIV infections among men and nearly two-thirds (63%) of all new HIV infections in 2010 (CDC, 2015). In addition, MSM accounted for more than half of all individuals living with HIV infection by the end of 2011 (CDC, 2015). Approximately 311,087 MSM diagnosed with AIDS have died in the USA since the beginning of the epidemic (CDC, 2015).

In terms of new HIV infections among MSM by race/ethnicity, Black MSM accounted for 11,201 or 38%, White MSM accounted for 9,008 or 31%, and Hispanic/Latino MSM accounted for 7,552 or 26% of all new HIV diagnoses among MSM in 2014 (CDC, 2016). HIV infection disproportionately impacts Black MSM, specifically young Black MSM. In 2010, young (13–24 years of age) Black MSM accounted for almost half (45%) of new HIV infections among Black MSM and 55% of new HIV infections among young MSM (CDC, 2015).

Sexual Risk Behaviors of HIV-Infected MSM in the USA

Although the annual number of newly diagnosed HIV infections has remained relatively stable since 1991 (CDC, 2009, 2011a), increases in HIV prevalence and sexually transmitted infections (STIs) among MSM in the USA (CDC, 2009, 2011a) underscore the need to fully examine and understand the individual, social, and structural factors and their impact among MSM living with HIV infection. MSM are more susceptible to HIV because of the increased efficiency of HIV transmission via condomless anal intercourse (CAI) (Khosropour et al., 2016). As a result, HIV-infected insertive partners are particularly likely to infect their uninfected receptive anal partners (Scott et al., 2014). Additionally, MSM can engage in role versatility, i.e., an HIV-uninfected MSM may be most susceptible to HIV, but once he becomes infected, he can efficiently transmit HIV to new partners if he is the insertive partner (Sullivan et al., 2012).

Two comprehensive reviews have explored the sexual risk behaviors of HIV-infected MSM in the USA (Crepaz et al., 2009; Van Kesteran, Hospers, & Kok, 2007). Crepaz et al. (2009) conducted a meta-analysis to determine the prevalence of UAI among HIV-infected MSM in the USA. Among half of the included studies, MSM of color (primarily Black and Latino) comprised the majority of the sample. The aggregate findings from the 30 studies showed that the estimated prevalence of CAI with any male partner among HIV-infected MSM was 43% (95% Confidence Interval [CI] = 37, 48). A second group of researchers conducted a literature review to identify studies describing sexual risk behaviors among HIV-infected MSM with a small number of studies occurring outside the USA from January 2000 to October 2005. The researchers found that more than half (29) of the 53 studies included in the analysis showed CAI prevalence rates among HIV-infected MSM of over 40%

(range 6–84%) (Van Kesteran et al., 2007). These results indicate that a sizeable percentage of HIV-infected MSM in the USA engage in CAI with their male partners, underscoring a major challenge for HIV prevention, although some sexual risk behaviors are with HIV seroconcordant partners (Khosropour et al., 2016).

MSM living with HIV infection have adopted several harm reduction strategies to reduce their risk of HIV transmission, including but not limited to abstinence (i.e., no sex); only engaging in oral sex; condom use; seroadaptive strategies; and withdrawal before oral and anal ejaculation with primary and non-primary sexual partners (Eaton et al., 2017; Grey, Rothenberg, Sullivan, & Rosenberg, 2015; Halkitis, Green, et al., 2005; McFarland et al., 2012; Parsons et al., 2005; Snowden, Raymond, & McFarland, 2009). Seroadaptive strategies consist of strategies that MSM use to reduce transmission risks through the selection of sexual partners based on serostatus, which may include “serosorting,” or the selection of other HIV-infected partners for CAI and/or “seropositioning” (i.e., only engaging in receptive anal intercourse with HIV-uninfected partners given the relative reduced risk of HIV transmission) (Le Talec & Jablonski, 2008).

Data from 2,491 HIV-infected MSM in 16 states collected from 2000 to 2002 highlighted a variety of HIV prevention approaches utilized by HIV-infected MSM (CDC, 2004). Almost one-third (31%) of HIV-infected MSM reported that they were abstinent and 61% reported having sex in the last 12 months. Among sexually active MSM, 30% reported oral sex exclusively, 13% anal sex exclusively, and 55% reported both behaviors. CAI (insertive) at last sexual encounter was less likely to occur with HIV-uninfected partners and partners of unknown status than with HIV-infected partners. Furthermore, among men who reported insertive anal intercourse, CAI (insertive) was significantly less likely to occur with HIV-uninfected partners than with HIV-infected partners (CDC, 2004).

Several studies in California and New York have explored the sexual risk behaviors and HIV prevention strategies of HIV-infected MSM. A longitudinal study of 732 MSM in San Francisco showed that 11% of HIV-infected MSM did not engage in sex, 15% used condoms consistently, 13% were exclusive serosorters, and 20% were seropositioners (McFarland et al., 2012). A cross-sectional study of 1,211 HIV-uninfected and 251 HIV-infected MSM in San Francisco showed that approximately 18% of HIV-infected MSM did not engage in anal intercourse in the last 6 months (Snowden et al., 2009). Of those that engaged in anal intercourse, 21% used condoms all the time. Among HIV-infected MSM who had CAI, 20% were pure serosorters. Finally, among HIV-infected MSM who reported serodiscordant CAI, 14% were seropositioners (Snowden et al., 2009). A randomized controlled study specifically among 1,168 HIV-infected MSM enrolled in the Seropositive Urban Men’s Intervention Trial (SUMIT) conducted in New York City and San Francisco from 1999 to 2002 also showed that HIV-infected MSM have adopted a variety of harm reduction sexual health approaches (Halkitis, Green, et al., 2005). Fifty-one percent (51%) HIV-infected MSM engaged in sexual experiences with other HIV-infected MSM and among those men, 62% engaged in CAI with their seroconcordant partner (Halkitis, Green, et al., 2005).

Studies also indicate that some HIV-infected MSM practice withdrawal before ejaculation during anal and oral sex as a harm reduction strategy (Parsons et al., 2005). The researchers found that men in New York and San Francisco reported more acts of oral sex without ejaculation than with ejaculation, and that HIV-infected MSM in San Francisco were more likely to use withdrawal before ejaculation during anal sex as a harm reduction strategy than men in New York City. A second study also explored sexual risk-taking behavior among 463 HIV-infected MSM in San Francisco and New York City. One hundred and seventy-nine (179) of the men reported that they were in primary relationships. The researchers found that seroconcordant and discordant couples engaged in unprotected insertive and receptive anal intercourse with and without ejaculation (Hoff et al., 2004).

There are limitations to seroadaptive and withdrawal before ejaculation approaches among HIV-infected MSM (Wilton et al., 2015). Seroadaptive strategies may not be effective in reducing HIV superinfection (infection with another strain of HIV in someone who is already HIV-infected) which is fortunately uncommon and the acquisition of other STIs which is unfortunately quite common (Blackard, Cohen, & Mayer, 2002; Kalichman, Rompa, & Cage, 2000; Van Kesteran et al., 2007). However, observational and mathematical modeling data support the premise that serosorting has reduced HIV transmission in some locations (Cassels, Menza, Goodreau, & Golden, 2009; Truong et al., 2006). For example, Truong et al. (2006) proposed that serosorting appeared to explain the rise in CAI and STIs yet stable HIV incidence among MSM in San Francisco. This analysis utilized an ecological approach with multiple pre-existing data sources (i.e., STI case reporting and HIV counseling and testing data) to assess whether increases in HIV serosorting among MSM may contribute to preventing the further expansion of the epidemic in San Francisco. A second group of researchers utilized mathematical modeling to estimate how serosorting may affect HIV prevalence and individual risk among MSM in Seattle, Washington (Cassels et al., 2009). Data from the 2003 random digit dial study of 400 MSM in Seattle was used to create the model. In their model based on observed levels of serosorting, the researchers predicted an HIV prevalence of 16%. In contrast, if serosorting was eliminated in the population, the predicted HIV prevalence would increase to 24.5%. The researchers concluded that under realistic scenarios of sexual behavior and testing for HIV, serosorting can be an effective harm reduction strategy for MSM in the USA (Cassels et al., 2009).

Additional limitations to seroadaptive strategies are that they rely on accurate assessment of HIV serostatus by both parties and mutual disclosure (Crepaz et al., 2009; Eaton, West, Kenny, & Kalichman, 2009; Van Kesteran et al., 2007). For HIV-infected MSM, serosorting may be “seroguessing,” resulting in transmission from partners who were unaware of their HIV infection. Additionally, there may be some residual risk associated with the withdrawal before ejaculation approach because of the presence of HIV in pre-ejaculatory fluid and the possibility that the insertive partner may not withdraw before ejaculation, even if the initial intent was to do so (Parsons et al., 2005).

Several explanations have been proposed for the sizeable percentage of HIV-infected MSM in the USA who engage in CAI. One explanation points to the

availability of highly active antiretroviral therapy (HAART) and associated therapeutic optimism (i.e., treatment makes HIV infection a less serious concern) as a direct cause of the increase in sexual risk behavior (Levy et al., 2017). A meta-analysis of twenty-five (25) studies revealed that the likelihood of unprotected sex was higher among HIV-infected individuals who believed that HIV transmission would be less likely to occur if they were on HAART, have an undetectable viral load or reported being less concerned about having unprotected sex given that HAART was readily available (Crepaz, Hart, & Marks, 2004; Van Kesteran et al., 2007). Another explanation is that HIV-infected MSM who are living longer as a result of HAART have become tired of always having to monitor their sexual behavior (“prevention fatigue”) (Ostrow et al., 2002; Van Kesteran et al., 2007). A cross-sectional study among 547 HIV-infected and –uninfected MSM enrolled in the Multicenter AIDS Cohort Study found that HIV-infected MSM with the least concern about their infectiousness due to the availability of HAART and/or safer sex fatigue were more likely to report CAI (insertive) for HAART and safer sex fatigue compared with other HIV-infected MSM (Ostrow et al., 2002).

Another factor that may contribute to the increase in unprotected sex among HIV-infected MSM relates to the behavioral phenomenon of barebacking (intentional unprotected anal sex) (Halkitis, Wilton, et al., 2005; Van Kesteran et al., 2007). Data from 1,168 HIV-infected MSM in New York City and San Francisco enrolled in SUMIT revealed that 27.2% of participants identified as barebackers. Men from San Francisco were also more likely to identify as barebackers than men from New York City (35.7% vs. 28.4%). In terms of adherence to therapy, barebackers were more likely to report having missed a medication dose in the 30 days before the survey than non-barebackers (68.2% vs. 55.8%) (Halkitis, Wilton, et al., 2005). Barebacking has become an important and compelling behavior for some HIV-infected MSM who believe that it enhances intimacy, wholeness, and connectedness (Halkitis, Wilton, et al., 2005).

Psychosocial Issues Associated with Transmission Risk Behaviors Among HIV-Infected MSM

Another explanation for the high prevalence of CAI among HIV-infected MSM may be due to the frequent presence of co-occurring psychosocial health issues among MSM, such as depression, substance use, partner and homophobic societal violence, and childhood sexual abuse (Friedman et al., 2017; Mimiaga et al., 2015). Stall et al. (2003) explored the associations between multiple co-occurring psychosocial conditions (i.e., polydrug use, depression, childhood sex abuse, and partner violence), HIV status, and high-risk sexual behavior among 2,881 MSM in four urban cities (Los Angeles, San Francisco, Chicago, and New York). Multivariable logistic regression analyses revealed that polydrug use (Odds Ratio [OR] = 2.2; 95% CI = 1.7, 2.8) and partner violence (OR = 1.5; 95% CI = 1.2, 1.9) were significantly associated with HIV seropositivity. In addition, polydrug use (OR = 2.0; 95%

CI = 1.5, 2.7), partner violence (OR = 1.7; 95% CI = 1.3, 2.3), and childhood sexual abuse (OR = 1.4; 95% CI = 1.1–1.9) were significantly associated with high-risk sexual behavior among the cross-sectional sample of MSM enrolled from 1996 to 1998. The researchers also explored whether the interconnection or presence of multiple psychosocial health conditions increased vulnerability to HIV infection and likelihood of engaging in high-risk sexual behavior. After controlling for demographic variables, Stall et al. (2003) found that a greater number of psychosocial health conditions was associated with ascending odds ratios for having high-risk sex and ascending prevalence rates for HIV infection compared with the MSM who did not report any psychosocial health problems, suggesting that there were synergistic epidemics (syndemics) potentiating HIV risk (Stall et al., 2003).

Several structural- and environmental-level factors may also help explain the high prevalence of CAI among HIV-infected MSM (Lewnard & Berrang-Ford, 2014). Access and utilization of the Internet and commercial sex environments may facilitate the spread of HIV and other STIs among MSM in general (Van Kesteran et al., 2007). One example is the increase in early syphilis in the San Francisco City STI Clinic from 41 cases in 1998 to 495 cases in 2002 (CDC, 2003). This increase was also accompanied with an increase in the proportion of syphilis cases among MSM, from 22% in 1998 to 88% in 2002. The San Francisco Department of Public Health analyzed surveillance data from MSM to assess the association between early syphilis infection, Internet use, and other modalities among MSM to meet sexual partners. Of the more than 400 MSM with syphilis included in the analysis, almost one-third (32.6%) reported meeting their sexual partner(s) via the Internet and 31.4% reported meeting their sexual partner(s) at a commercial sex environment such as a bathhouse, sex club, and adult bookstore (CDC, 2003). These environments can facilitate HIV and STI risk by allowing MSM to have access to multiple partners in a short time interval.

Homelessness and unstable housing may also account for the sizeable percentage of HIV-infected MSM in the USA who engage in CAI. These structural-level factors have been associated with HIV risk behaviors and poorer health outcomes among HIV-infected individuals (Kidder, Wolitski, & Royal, 2007). Aidala, Cross, Stall, Harre, and Sumartojo (2005) explored the impact of housing among more than 2,000 individuals living with HIV infection receiving services at 16 medical and social service agencies. The researchers found an association between unstable housing, drug use, and sexual risk behavior. Thirty-four percent (34%) of the sample identified as an MSM living with HIV infection. Among HIV-infected MSM in the study, almost 60% were either homeless or had unstable housing. Participants whose housing status improved over time significantly reduced their risk of drug use, needle use, needle sharing, and unprotected sex by half in comparison to individuals whose housing status had not changed (Aidala et al., 2005). This study not only shows that unstable housing is associated with high rates of drug and sexual risk behaviors but it also shows that improvements in housing status is strongly associated with changes in HIV risk behaviors. Thus housing is a structural-level HIV prevention intervention (The National AIDS Housing Coalition, 2005).

Interventions to Decrease HIV Transmission Behaviors Among HIV-Infected MSM

Several individual-, group-, and community-level behavioral interventions have been developed to reduce HIV and STI risk behaviors among HIV-infected MSM and MSM in general (Herbst et al., 2017). Crepaz et al. (2006) conducted a meta-analytic review of HIV interventions for persons living with HIV infection to determine overall efficacy in reducing HIV risk behaviors. Twelve studies from 1988 to 2004 met the study criteria. Four of those studies included samples that were more than two-thirds MSM. Overall, individual- and group-level interventions significantly reduced instances of unprotected sex (OR 0.57; 95% CI = 0.40–0.82) and decreased STI acquisition (OR 0.20; 95% CI = 0.05–0.73) among persons living with HIV infection. A more recent meta-analysis was conducted to examine the effects of behavioral interventions designed to reduce HIV and STI transmission among MSM (Johnson et al., 2008). The researchers identified 44 studies evaluating 58 interventions with 18,585 participants. Twenty-six of the interventions were small group-level interventions, 21 were individual-level interventions, and 11 were community-level interventions. Sixteen of the 58 interventions focused specifically among HIV-infected MSM. Forty of the interventions that were measured against minimal to no HIV prevention intervention reduced instances of or partners for UAI by 27% (95% CI = 15%, 37%). The other 18 interventions reduced UAI by 17% (95% CI = 5%, 27%) beyond changes observed in the standard or other intervention group (Johnson et al., 2008). These meta-analyses indicate that there are effective individual-, group-, and community-level interventions in place for HIV-infected MSM and MSM in general. However, they may not be reaching the population. Data from the National HIV Behavioral Surveillance System revealed that only 18% of MSM in 21 cities have participated in either an individual- or group-level intervention in the last 12 months (CDC, 2011b).

Behavioral interventions for MSM have been designed from a deficit-based model or framework with a focus on the deficits (e.g., substance use, childhood sexual abuse, CAI) of MSM and not their assets or strengths. MSM may perceive these interventions as judgmental and may be less likely to accept, adhere, and complete these behavioral interventions (Herrick et al., 2011). These deficit models or frameworks, while important and necessary, are limited and need to be complemented with other perspectives such as an assets-based approach (Morgan & Ziglio, 2007). Health assets are defined as the resources that individuals and communities have at their disposal, which protect them from risky behaviors, negative health outcomes and/or promote health (Morgan & Ziglio, 2007). There is evidence of strength or assets among MSM (Herrick, Stall, Goldhammer, Egan, & Mayer, 2013) but they also have not been fully conceptualized and systematically measured. An example is the presence of a social support network among HIV-infected MSM. The concept of social support and its positive impact on health has been studied extensively since the 1970s (Hall, 1999). It has been examined in diverse age groups, populations, and health conditions (Hall, 1999). Hall (1999) conducted a literature

review to examine the existing research on the relationship between social support and health among HIV-infected MSM. MSM living with HIV infection did report a social support network that consisted of partners, friends, family members, and other individuals. Another example documenting the assets of MSM is from Herrick et al. (2013). The researchers found from a sample of 4,066 MSM that about 75% of MSM with one or more psychosocial issues were still able to avoid high-risk sexual behaviors and to remain HIV uninfected (Herrick et al., 2013). Interventions that therefore focus on the assets or strengths of HIV-infected MSM and MSM in general need to be developed. These types of interventions may also improve intervention acceptability and efficacy (Herrick et al., 2011). MSM will also benefit substantially from structural-level interventions such as stable housing in order to reduce sexual risk behaviors that are more likely to transmit HIV and other STIs.

Antiretroviral Therapy Access and Adherence Among HIV-Infected MSM

The use of highly active antiretroviral therapy (HAART) has been shown to be effective in slowing down the progression of AIDS and in reducing HIV-related illnesses and deaths (Laffoon et al., 2015; Mayer et al., 2012; Siegfried, Uthman, & Rutherford, 2010). In addition, starting antiretroviral therapy earlier has been shown to reduce HIV transmission among serodiscordant sexual partners (Cohen et al., 2011; HIV Prevention Trials Network [HPTN], 2012) in the HPTN 052 study. Established in 2000, the HPTN is a worldwide clinical trials network funded by the National Institutes of Health (NIH) to develop and test the safety and efficacy of interventions to prevent the acquisition and transmission of HIV (HPTN, 2013). HPTN 052 study enrolled 1,763 HIV serodiscordant couples at 13 sites in Africa, Asia, and North and South America. Almost all (97%) of the couples were heterosexual. HIV-infected participants with CD4 counts between 350 and 550 cells/mm³ and their partners were randomly assigned to one of two study arms: (1) immediate ART treatment of the HIV-infected partner at enrollment, or (2) delayed initiation of ART for the HIV-infected partner until two consecutive CD4 cell counts at or below 250 cells/mm³ or the presence of an AIDS-defining illness. A total of 39 individuals who were HIV uninfected at enrollment became infected with HIV during the course of the study. Twenty-eight (28) of these cases were virologically linked to the infected partner with only one occurring in the early treatment group (hazard ratio, 0.04; 95% CI = 0.01–0.27). As a result, early initiation of ART led to a 96% reduction in HIV transmission to the HIV-uninfected partner (Cohen et al., 2011; HPTN, 2012).

The findings that increasing access to earlier initiation of HAART lead to reductions in HIV transmission have also been corroborated by ecological studies in British Columbia, San Francisco and KwaZulu-Natal, South Africa (Charlebois, Das, Porco, & Havlir, 2011; Eaton et al., 2012; Montaner, Lima, Barrios, Yip, & Wood, 2010; Tanser, Barnighausen, Grapsa, Zaidi, & Newell, 2013). However, a recent study from Denmark, where the HIV epidemic is almost exclusively among

MSM, did not find a decrease in HIV incidence in conjunction with wider access to HAART. The authors found that some of the new transmissions were occurring in the setting of acute HIV infection (i.e., clusters of individuals who are most infectiousness and often aware of their new HIV infection), as well as some individuals presenting late into care (Audelin et al., 2013). It is also conceivable that since anal HIV transmission is more efficient than heterosexual transmission, that the magnitude of the benefit seen in HPTN 052 may not be as great for MSM, and observational studies of MSM discordant couples are underway in Europe and Australia to help further refine understanding of the risk of HIV transmission from an MSM partner who is on suppressive antiretroviral therapy (Muessig et al., 2012).

Combining Biomedical with Behavioral and Structural Interventions

The prevention benefits of early initiation of antiretroviral therapy resulting in viral suppression and reduced HIV transmission can be augmented with individual- or couple-level and community-level behavioral prevention interventions (Das et al., 2010). For HIV-infected MSM to fully benefit from HAART, they must first know that they have HIV (Gardner, McLees, Steiner, Del Rio, & Burman, 2011), enter care soon after diagnosis (Tinsley & Xavier, 2011), be engaged in regular HIV care, and initiate and adhere to their medications (Gardner et al., 2011). Recent data from the CDC (2012b) was used to inform the stages of engagement in HIV care for MSM in the USA (Fig. 1.1). The stages of engagement in HIV care or treatment cascade provides a visual depiction of the number of individuals living with HIV infection who are actually receiving the full benefits of medical care and treatment (Valdiserri, 2012). This cascade is being used at the national, state, and local levels to identify gaps in care and opportunities to reduce barriers to care and improve the

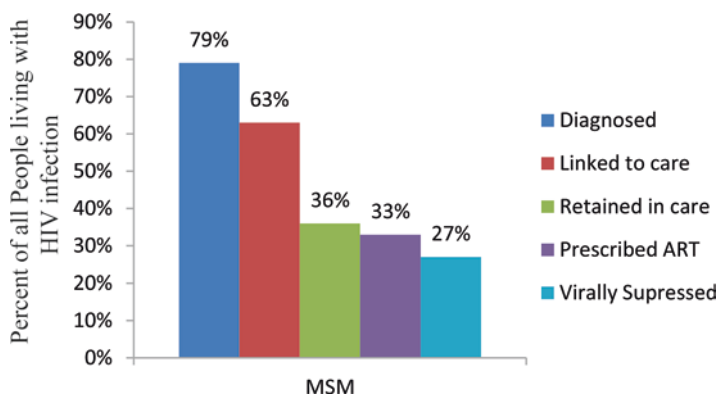


Fig. 1.1 Stages of HIV care by MSM category (CDC, 2012b)

delivery of services for persons living with HIV infection across the five stages of engagement in HIV care—from diagnosis of HIV infection and linkage in care to the initiation of ART, retention in care, and ultimate goal of viral suppression (Valdiserri, 2012). Only about one-quarter of all MSM living with HIV infection in the USA are in ongoing care and are virologically suppressed (CDC, 2012b). This points to the critical need to develop and/or expand upon effective interventions to support linkage and retention in HIV care.

Medication adherence is also necessary in order to achieve viral suppression for HIV-infected MSM engaged in care. Several studies have identified lower HIV adherence rates among HIV-infected MSM of color (Jacobson et al., 2001; Kleeberger et al., 2001, 2004; Oh et al., 2009). Four separate analyses from the Multicenter AIDS Cohort Study (MACS), a prospective study of HIV infection among 5,622 MSM in the USA, found that Black MSM living with HIV infection were more likely to report lower adherence than their White counterparts (Jacobson et al., 2001; Kleeberger et al., 2001, 2004; Oh et al., 2009). One study analyzing data from the Seropositive Urban Men's Study ($N = 456$), a formative study of HIV-infected MSM in two US cities, did not find a significant difference between adherence by race/ethnicity after controlling for confounders (Halkitis, Parsons, Wolitski, & Remien, 2003).

Several studies have also documented racial/ethnic differences in ART access among HIV-infected MSM (Halkitis et al., 2003; Jacobson et al., 2001; Stall et al., 2001). In these studies, Black MSM reported less access to ART than their White counterparts (Halkitis et al., 2003; Jacobson et al., 2001; Stall et al., 2001). Some explanations have been proposed to describe the disparity in ART access by race given that research has shown that Black MSM living with HIV infection were as likely as their White counterparts to report having health insurance (Halkitis et al., 2003; Kass, Flynn, Jacobson, Chmiel, & Bing, 1999; Millett, Peterson, Wolitski, & Stall, 2006). They may be in part due to health care provider biases, prejudices, and uncertainty when treating people of color as documented in the Institute of Medicine (IOM) report (IOM, 2002); mistrust of the health care system due to previous injustices such as the Tuskegee study (Freimuth et al., 2001); and perceived stigma about accessing care in unsympathetic clinical settings (CDC, 2011c; Eaton et al., 2015; Kinsler, Wong, Sayles, Davis, & Cunningham, 2007; Sayles, Wong, Kinsler, Martins, & Cunningham, 2009), which may discourage Black MSM living with HIV infection from engaging in needed care.

As HIV-infected MSM are engaged in the stages of HIV care, ongoing prevention counseling to reduce the likelihood of new HIV transmissions and acquisition of STIs should be a critical component of their care and treatment plan. The Medical Monitoring Project (MMP) documented a need for ongoing prevention counseling among MSM living with HIV infection (CDC, 2011d). The MMP collects clinical and behavioral data from a national representative sample of HIV-infected adults receiving medical care in outpatient facilities in the USA and Puerto Rico. Of the 1980 MSM enrolled in the MMP from 2008 to 2010, ART prescriptions were documented for 89% of MSM. Of those prescribed ART, 81% had achieved viral suppression, but only 39% of MSM had received prevention counseling (CDC, 2011d).

Identifying, Linking, and Retaining HIV-Infected MSM in Care

Several interventions have been shown to improve access to care and ultimately health outcomes for HIV-infected MSM in the USA and prevent the transmission of HIV. Two main linkage to care models have been shown to be effective in engaging newly diagnosed HIV-infected individuals in stable HIV care—the use of health system navigators and professional case managers (Bradford, Coleman, & Cunningham, 2007; Craw et al., 2008, 2010; Gardner et al., 2005). The patient health navigation model involves training community-based near peers to work with clients newly diagnosed with HIV infection. Bradford et al. (2007) explored the impact of this model in decreasing barriers to care and improving health outcomes for persons living with HIV infection. The researchers followed a cohort of 437 HIV-infected individuals over a 3-year period in four US cities (Portland, Seattle, Boston, and DC). Bradford et al. (2007) found that self-reported barriers to care (i.e., no health insurance, problem making an appointment, and worried about how to pay for care) were significantly reduced at 6 and 12 month follow-up compared to baseline measures at enrollment. In terms of health outcomes, the proportion of participants with an undetectable viral load was 50% greater at 12 months follow-up than at baseline. This study therefore showed that a patient health navigation model can reduce barriers to HIV care and enhanced linkage and engagement in HIV primary care.

In addition to the health navigation model, brief case management interventions have also been shown to improve linkage to care for persons newly diagnosed with HIV infection (Craw et al., 2008, 2010; Gardner et al., 2005). The Antiretroviral Treatment Access Study (ARTAS)-I was conducted in four US locations (Atlanta, Baltimore, Los Angeles, and Miami) among 273 persons newly diagnosed with HIV infection. Participants were randomized to a case management intervention (five sessions with a case manager over 90 days) or standard of care group (information about HIV and local care resources as well as passive referral to a local HIV medical care provider). The results indicated that a greater percentage of the case-managed participants than the standard of care participants visited an HIV clinician at least once within 6 months (78% versus 60%) and at least twice within a year (64% vs. 49%). The brief case management intervention was therefore associated with significantly higher rates of linkage to HIV care at 6 and 12 months (Gardner et al., 2005).

Given the successful results of the ARTAS-I study, CDC funded a demonstration project called ARTAS-II to evaluate the feasibility of implementing the brief case management intervention in local and state health departments and community-based organizations (CBOs) (Craw et al., 2008, 2010). Ten health departments and CBOs from across the USA were involved in the study from 2005 to 2006. Of the 626 individuals newly diagnosed with HIV infection enrolled in ARTAS-II, 497 (79%) visited an HIV clinician at least once within the first 6 months. The positive results of the ARTAS-II study indicated that the brief case management intervention is a useful model for health departments and CBOs to use in order to ensure that recently diagnosed HIV-infected persons are linked to HIV care within a reasonable period of time (Craw et al., 2008, 2010).

A variety of strategies have been documented to specifically identify, link, and engage HIV-infected MSM (specifically young MSM of color) in primary medical care (Hidalgo et al., 2011) but the effectiveness of these approaches has not been well documented. During the Health Resources and Service Administration's, Special Projects of National Significance—Young MSM of Color Initiative, part or full-time paraprofessional workers were employed by all of the funded eight demonstration sites to conduct outreach and linkage services (Hidalgo et al., 2011). These paraprofessionals had a variety of job titles including outreach workers, connection to care specialists, peer youth advocates or specialists, supportive care managers, service linkage workers, and Disease Investigation Services (Hidalgo et al., 2011). In terms of outreach and identifying young MSM of color living with HIV infection, a majority of the funded sites conducted HIV outreach and education at bars, college campuses, gay pride events, and health fairs. Half of the sites utilized HIV mapping techniques to identify geographic areas with high HIV rates for more focused outreach activities in these areas. Social marketing campaigns were also utilized by a few of the sites to raise awareness about the importance of HIV testing and treatment. Some sites also participated on HIV prevention planning groups to coordinate services and disseminate information. A few of the funded sites utilized drop-in centers to enhance self-efficacy to enter HIV care; conducted outreach and testing with HIV mobile vans; and recruitment and outreach using print and online advertisements and social networking sites including chat rooms and dating sites (Hidalgo et al., 2011).

Following identification of HIV-infected MSM of color, all of the eight sites utilized their outreach works and other paraprofessionals to enhance linkage in HIV care. These workers performed similar roles and responsibilities as ARTAS-I and -II linkage case managers and patient health navigators. This included assistance with scheduling medical appointments, arranged transportation for appointments, reminder telephone calls, and case finding for clients with missed appointments. In addition, most of the outreach workers also escorted individuals identified through outreach to their initial medical visit. As a result of these combined approaches, 87% of young MSM ($n = 291$) included in the analysis of 334 participants were linked to medical care within 3 months (Hidalgo et al., 2011). Given the dramatic increase in HIV incidence among young Black MSM (CDC, 2012a) and that younger Americans (25–34 years of age) living with HIV infection are less likely to be virally suppressed (CDC, 2012a) there needs to be a continued focus on engaging and retaining young MSM of color living with HIV infection in primary medical care.

Policy and Structural Approaches to HIV Prevention and Care for HIV-Infected MSM

Policy and structural-level factors including stigma, HIV confidentiality and disability laws, laws banning the entry of HIV-infected persons into the USA, HIV nondisclosure laws, discrimination within the workplace, and expanded health care coverage impact the health and well-being of HIV-infected MSM in the USA. After three decades of extensive public health education efforts, voluntary HIV testing,

and counseling about HIV in the USA, one would think that HIV-related prejudice and discrimination in the USA are now relics of the past. Unfortunately, this is not the case (Herek, 1999; The Body, 2003). Individuals living with HIV infection in the USA, including HIV-infected MSM, have been and continue to be the target of stigma and discrimination since the first cases of HIV infection were diagnosed.

HIV-related stigma refers to unfavorable beliefs, attitudes, policies, and related behaviors directed toward individuals perceived to be living with HIV infection as well as their loved ones, associates, social groups, and communities (Mitzel et al., 2015; The Body, 2003). A national representative survey of Americans on HIV/AIDS conducted by the Kaiser Family Foundation showed that a substantial number of Americans still continue to hold potentially stigmatizing attitudes toward individuals living with HIV infection. For example, 45% of Americans reported that they would be uncomfortable having their food prepared by someone who is HIV positive, 36% with having an HIV positive roommate, and 18% working with someone living with HIV/AIDS (Kaiser Family Foundation, 2011). Stigmatizing attitudes toward HIV-infected MSM from HIV negative MSM have also been documented in the literature (Wohl et al., 2013). According to Diaz (2003), when HIV negative Latino MSM were asked “Do you believe HIV-infected people are responsible for having gotten infected?” and “Do you believe that HIV-infected people are more sexually promiscuous?” 57 and 52% of HIV negative Latino MSM affirmed these statements.

HIV-related stigma fuels the HIV epidemic in the USA and among MSM. It discourages discussion and disclosure of HIV status with providers and sexual partners (CDC, 2011c; The Body, 2003; Center for AIDS Prevention Studies [CAPS], 2006), it deters testing and knowledge of HIV status (CAPS, 2006), and it also reduces access to HIV care and services (Kinsler et al., 2007; Sayles et al., 2009). Some MSM living with HIV infection may be less inclined to disclose their HIV status as it may lead to partner rejection, limit their sexual opportunities, or put them at increased risk for physical and sexual violence (CAPS, 2006). For example, 11.5% of MSM reported experiencing physical harm since their HIV diagnosis in the HIV Costs and Service Utilization Study of 2,864 adults living with HIV infection (Zierler et al., 2000). In terms of HIV testing, a study of 847 men and 1,126 women in seven US cities found that HIV testing behavior was related to low levels of STD-related stigma (Fortenberry, McFarlane, & Bleakley, 2002).

Stigma as a barrier to HIV care has also been documented in the literature. Sayles et al. (2009) conducted a cross-sectional study of 202 HIV-infected persons (predominantly Black) in Los Angeles County to examine the association between stigma and self-reported access to medical care. One-third of the participants reported high levels of stigma. The researchers also found that internalized HIV stigma measured using a 28-item scale was significantly associated with poor access to care (OR = 4.42; 95% CI = 1.88, 10.37) after adjusting for demographic, clinical, and other characteristics. A second prospective study also conducted in Los Angeles County explored the effect of perceived stigma on access to care among 223 low-income individuals living with HIV infection. Forty-six percent (46%) of the study population self-identified as Black and 26% of respondents reported at least one

form of stigma from a health care provider using a 4-item scale. Perceived stigma was found to be associated with low access to care at baseline (OR = 3.29; 95% CI = 1.55, 7.01) and 6 months follow-up (OR = 2.85; 95% CI = 1.06, 7.65) after controlling for sociodemographic and clinical factors (Kinsler et al., 2007). A more recent study of the impact of stigma specifically among Black MSM showed that among Black MSM living with HIV, stigma from health care providers was associated with longer gaps in time since their last HIV care appointment (Eaton et al., 2015). Interventions to reduce stigma may therefore help to reduce new HIV cases and the impact of the epidemic in the USA (CDC, 2011c; The Body, 2003).

Sengupta, Banks, Jonas, Miles, and Smith (2011) conducted a systematic review of the literature to identify and determine the effectiveness of HIV-related interventions in reducing HIV-related stigma. Nineteen studies were included in the review. Nine of the studies were random clinical trials (RCTs), six were non-randomized control group studies, and four were pretest/post-test without a control group. Studies were conducted in North America, Europe, Asia, and Africa. The interventions focused on students, women, providers, persons living with HIV infection, parents, and the community. The duration of the interventions ranged from 15 min to 2 years. Fourteen of the nineteen studies demonstrated effectiveness in reducing HIV-related stigma. The authors assessed the quality of these studies and indicated that only two of the fourteen effective studies were considered “good” studies based on internal validity, the extent to which the interventions addressed stigma reduction, the stigma measures used, and the statistics reported to demonstrate effectiveness. Furthermore, the authors concluded that even with a well-designed intervention that shows a reduction in HIV-related stigma, we still know very little about how or if the change in stigma led to improvements in HIV testing, access to care, improved mental health outcomes, and enhanced policy support for people living with HIV infection. Therefore, the paucity of quality studies within the last 20 years identified in the review demonstrates the current gaps in evidenced-based interventions to reduce HIV-related stigma in the USA and the rest of the world (Sengupta et al., 2011).

Given the stigma and discrimination associated with HIV early on in the epidemic, legal protections were an essential component of the USA’s response to stigma and discrimination (The Body, 2003). The recognition of the negative consequences of HIV-related stigma prompted the enactment of statutory protections for persons living with HIV infection, particularly related to the confidentiality of HIV testing results. The confidentiality of HIV test results is considered a protection under State laws and the US Constitution. These privacy laws aimed to protect individuals diagnosed with HIV infection from stigma and its consequences by keeping their health information confidential (The Body, 2003). HIV also qualifies as a disability under Federal and State laws as a result of a landmark case *Bragdon v. Abbot* (1998), the first HIV-related discrimination case that was brought to the US Supreme Court. The Supreme Court ruled that Congress intended HIV/AIDS to be included as a disability under the Americans with Disability Act of 1990. This protected persons living with HIV infection from discrimination in employment; housing; government services; and public places including schools, hotels, and medical offices (The Body, 2003).

Other laws and policies have and continue to contribute to HIV-related stigma and discrimination in the USA. As of 2010, 37 states have enacted legislation that criminalizes nondisclosure of HIV status in the USA (Lambda Legal, 2010). This may actually deter MSM from getting testing and knowing their HIV status. In some cases, the laws punish safer sex practices that are part of a risk reduction strategy. It is not known to what extent these nondisclosure laws deter high-risk behavior but it does fuel HIV-related stigma in the USA (Shriver, Everett, & Morin, 2000).

Another example of a law that was viewed by public health officials and advocates as stigmatizing and a barrier to HIV prevention was the statutory ban on immigration and travel into the USA by HIV-infected persons (Shriver et al., 2000). In 1993, Congress passed a law that prohibited HIV-infected individuals from traveling to the USA, including those wanting to live and work in the USA legally. This became known as the HIV Travel Ban (Kirberger, 2013). It was not until 2009 that the ban was lifted by President Obama (PBS, 2009).

Stigma and discrimination continue to persist for MSM in the work setting. A 2008 national probability survey found that 42% of lesbian, gay, and bisexual (LGB) respondents had experienced at least one form of sexual orientation-based discrimination (i.e., workplace harassment or lost a job) in their lifetime and 27% had experienced employment discrimination within the last 5 years prior to completing the survey. Discrimination and fear of discrimination can have negative effects on LGB employees in terms of mental and physical health, workplace productivity, job satisfaction, and job opportunities (Sears & Mallory, 2011). On April 25, 2013, the Employment Non-Discrimination Act (ENDA) prohibiting workplace discrimination based on sexual orientation and gender identity for lesbian, gay, bisexual, and transgender persons was introduced in the U.S. Senate and House for consideration (The Press-Enterprise, 2013). The passage of this Act has favorable implications for gay and bisexual men in the USA in terms of job security, satisfaction, salary, job performance, and overall health.

Health care policies or laws that expand access to HIV medical care and supportive services are important policy-level approaches with benefits for persons living with HIV infection including HIV-infected MSM. Key programs that currently provide health insurance coverage, care, and support for persons living with HIV infection in the USA include Medicaid, Medicare, and the Ryan White Program (Kaiser Family Foundation, 2012). A 2012 analysis of data from a network of high-volume HIV clinics found that 42% of persons with HIV in care were covered by Medicaid, 12% by Medicare, 24% by Ryan White, and only 13% of patients had private insurance (Fleishman & Gebo, 2012).

Health Reform and Prevention for HIV-Infected MSM

The Affordable Care Act (ACA), signed into law on March 23, 2010, by President Obama, represents one of the most significant overhauls to the US health care system since the passage of Medicaid and Medicare in 1965 (Vicini & Stempel, 2012).

The goal of the ACA is to expand access to affordable health insurance coverage and reduce the number of uninsured Americans. As such, it is expected to expand access to care for persons living with HIV infection including HIV-infected MSM (Crowley & Kates, 2012). Beginning in 2014, insurers have been no longer able to terminate or deny insurance coverage for persons living with HIV infection based on their pre-existing condition. They will also not be allowed to impose annual limits on how much the insurance company will cover over an individual's lifetime (AIDS.gov, 2012; Black AIDS Institute, 2010; Kaiser Family Foundation, 2012). The ACA also expanded Medicaid eligibility to include individuals with incomes below 133% of the Federal poverty line. As a result, persons living with HIV infection who meet this income threshold will be eligible for Medicaid in a state that is implementing Medicaid expansion. In addition, HIV-infected individuals who do not meet the eligibility criteria for Medicaid, Medicare, or Ryan White will have the option to buy coverage from the health insurance marketplace (Kaiser Family Foundation, 2012).

One of President Obama's top HIV/AIDS policy priorities was the development and implementation of a National HIV/AIDS Strategy (NHAS) for the USA. Shortly after the passage of the ACA, the NHAS was released in July 2010 to provide a roadmap with key benchmarks and greater coordination to respond to the HIV epidemic in the USA (The White House, 2010). The three primary goals of the NHAS are to reduce the number of new HIV infections; increase access to quality care for persons living with HIV infection; and reduce HIV-related health disparities among between groups (The White House, 2010). In addition to describing the disproportionate impact of HIV infection among gay and bisexual men, the NHAS also influenced the research and prevention efforts of federal agencies. For example, in order to meet the goals of the NHAS, the CDC implemented a High-Impact Prevention approach that consists of directing resources to geographic areas, interventions, and populations (i.e., MSM) that could have the greatest impact on HIV rates and health equity (CDC, 2011e).

Recommendations and Conclusions

Despite increasing evidence and awareness that earlier initiation of HIV treatment is associated with decreased HIV transmission, the numbers of new HIV infections among US MSM has continued to increase in recent years. Factors that are facilitating this increase include perceptions that HIV is not as serious as before, so that unprotected sex may be more acceptable, as well as the syndemic effects of substance use, depression, and other responses to the adversity that many MSM experience (Mimiaga et al., 2015). Social and structural factors, including unstable housing, homophobia, institutional racism, stigma, and discrimination, play an important role in potentiating the epidemic among MSM, particularly those from communities of color. Therefore, policy and structural-level changes can impact the health and well-being of HIV-infected MSM in the USA.

Evidence-based individual and group interventions have contributed to decreases in high-risk behaviors among some HIV-infected MSM. Early initiation of treatment has been associated with decreased HIV transmission, but recently, only about one-quarter of US MSM are virologically suppressed. Interventions using professional case managers and peer health system navigators have been shown to improve engagement in care and virological suppression. New modalities, such as culturally tailored behavioral interventions and those based on the existing assets of MSM (e.g., support systems), need to be combined to improve engagement in care, virological suppression, decreased instances of unprotected sex, and improved medical adherence. If many of these promising approaches can be scaled up and culturally tailored for the diverse subgroups of MSM living with HIV infection, more effective prevention of new HIV transmissions is feasible.

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