

# Serosorting Sexual Partners by Gay and Bisexual Men to Prevent HIV Infection: Implications for Public Health Clinicians

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**ABSTRACT** The most recent Centers for Disease Control and Prevention epidemiological statistics in the United States demonstrate that gay and bisexual men are at most risk for acquiring new HIV infections. While public health campaigns aimed at gay and bisexual males have resulted in improved HIV screening and greater awareness of the need for safer sex practices, barebacking has become a practice of increasing incidence. This act carries the highest risk of HIV transmission and acquisition; and data suggest HIV disease burden is higher among ethnic minorities. Serosorting—purposely seeking HIV serorecordant partners—to help lower risk of HIV infection is common. While this can be a positive step in preventing the spread of HIV, it carries serious threats that must be acknowledged. The purpose of this article was to explore the positive and negative aspects of serosorting in the prevention of HIV, describe ways in which health care providers can approach the topic with clients, provide clinical practice implications, and suggest some direction for future research.

Key words: AIDS, barebacking, bisexual, gay, HIV, homosexual, serosorting.

Data indicate incidence rates of HIV infection among gay and bisexual men continue to rise. The most recent epidemiological statistics regarding new HIV infections in the United States demonstrate this population to be at most risk for infection. Comparing rates between 2008 and 2010, the Centers for Disease Control and Prevention (CDC, 2013) reported a 12% increase in the number of new HIV infections in men who have sex with men (MSM). While the burden of new infections is high in MSM in general, ethnic minorities are at even higher risk. Data between 2008 and 2010 indicate 51% of all new cases of HIV infection in African-Americans were in MSM; 68% of all new cases of infection among Latinos were in MSM during this same time period (CDC, 2013). Incidence in younger MSM (ages 13–24) also increased between

2008 and 2010. And although gay and bisexual men only constitute about 7% of the male population in the United States, they account for 78% of all new US cases of HIV infection (CDC, 2013).

Consequently, lowering rates of infection among this vulnerable group has been, and continues to be, a major public health objective (CDC, 2014a). Over a 5-year period, the CDC awarded \$55 million to 34 community-based organizations to provide HIV screening specifically to communities of MSM (CDC, 2014a). And the number of MSM who are aware of their seropositive HIV status increased from 56% in 2008 to 66% in 2011 (CDC, 2014a). Despite some of the encouraging data indicating greater awareness of serostatus among gay and bisexual men, there are other data suggesting unsafe sexual behaviors in these men

are increasing (Paz-Bailey et al., 2013). Barebacking (condomless anal intercourse) has become an increasingly common practice (Paz-Bailey et al., 2013). Bareback receptive anal intercourse carries the highest risk of HIV acquisition; and it is the prominent etiologic force in the major disparate burden HIV places on gay and bisexual men (Paz-Bailey et al., 2013). Reported incidence of unprotected anal intercourse in the last 12 months in MSM increased almost 20% between 2005 and 2011 (Paz-Bailey et al., 2013). And while a thorough discussion of the rise in bareback sex among MSM is beyond the scope of this work, it is believed to be multifactorial (Blackwell, 2008b). Wolitski (2005) proposed six etiologic influences he believes are contributing to the higher incidence of bareback sex among MSM, including: (1) improvements in HIV treatment; (2) more complex sexual decision making; (3) the Internet; (4) substance use; (5) safer sex fatigue; and (6) changes in HIV prevention programs.

Data also suggest that knowledge of HIV serostatus plays a significant role in sexual decision making among MSM. Those MSM who were unaware of their positive HIV serostatus were more than twice as likely to participate in bareback sex during their last sexual episode than those who were aware of their HIV serostatus (Paz-Bailey et al., 2013). These data indicate that MSM are greatly considering their own and the self-reported HIV serostatus of their sexual partners when choosing whether or not to use condoms during anal intercourse. Selecting sexual partners based on self-reported HIV serostatus is one behavior that is common among gay and bisexual men (Eaton, Kalichman, O'Connell, & Karchner, 2009).

Termed serosorting, the practice does have some positive aspects, particularly in reducing the spread of HIV to HIV-seronegative men by seropositive men who serosort with other seropositive men (Chen, Vallabhaneni, Raymond, & McFarland, 2012; Eaton, Kalichman, et al., 2009). It also indicates a direct attempt to reduce risk of infection among those who have a negative HIV serostatus and possibly efforts to reduce transmission in those who have a positive HIV serostatus.

Nurses and other clinicians working in public health have a unique role in promoting the health of the community; and displaying cultural competence in caring for all clients is an essential

expectation. Therefore, clinicians should possess the appropriate skill and empathy necessary to treat gay and bisexual men. The purpose of this article was to explore the positive and negative aspects of serosorting in the prevention of HIV, describe ways in which health care providers can approach the topic with clients, provide clinical practice implications, and suggest some direction for future research.

## **Literature Review: Serosorting among Gay and Bisexual Men**

To conduct the review of the literature appropriate for this discussion, MEDLINE (EBSCOhost) and CINAHL Plus databases were accessed. The main search term used for the review was serosort\*; this was then combined with multiple other terms related to the topic. These terms included gay, bisex\*, men who have sex with men, HIV, AIDS, bareback\*, and condom. In addition, data referenced by major health authorities, including the CDC and World Health Organization (WHO) were reviewed. In addition, the specific studies found by the systematic review conducted by the WHO (2011) that were used as the basis for their clinical recommendation on serosorting were each individually scrutinized (Table 1).

Serosorting can be defined as selecting a sexual partner of the same HIV serostatus, often to practice unprotected anal intercourse (Chen et al., 2012), also known as barebacking (Blackwell, 2008b). Serosorting is one method employed by HIV-seronegative gay and bisexual men to reduce their risk of HIV infection. In fact, researchers have suggested this practice is more commonly adhered to by HIV-negative gay and bisexual men than consistent condom use (McFarland et al., 2012). Holt (2014) asserts that serosorting research began appearing in the international HIV literature around 2006 and 2009. Calculating the exact number of MSM who engage in serosorting is difficult as a consequence of the inherent challenges that come with obtaining representative samples in research on gay and bisexual populations (Meyer & Wilson, 2009). However, estimates have placed the prevalence of this behavior as between 21% and 62% in both HIV-seropositive and HIV-seronegative MSM (Eaton, Kalichman, et al., 2009).

TABLE 1. *Data Assessing the Relationship Between Serosorting and HIV Transmission: WHO (2011) Systematic Review*

| Authors                                  | Major conclusions   |
|--|---|
| Golden, Stekler, Hughes, and Wood (2008) | Serosorting prevalence increased from 2001 to 2007; 32% of new HIV infections occurred in serosorters; The prevalence of HIV was higher among serosorters during 2004–2007                                      |
| Jin et al. (2009)                        | Serosorting was associated with an intermediate risk of HIV infection   |
| Marks et al. (2010)                      | Self-reported HIV-negative Black and Latino MSM who engaged in serosorting were less likely to have unrecognized HIV infection than men who engaged in unprotected anal intercourse without using this strategy |

The behavior in HIV-seropositive MSM appears to be partly responsible for stabilizing HIV infection rates in some communities (Truong et al., 2006). Serosorting among HIV-seronegative gay and bisexual men is a contentious topic, with authoritative bodies like the CDC not recommending the practice, while other social scientists have shown it to be more effective than barebacking with serodiscordant partners. For example, although their data were derived from heterosexual samples, a Ugandan-based study by Wawer et al. (2005) indicated that 28.9% of HIV-seropositive individuals transmitted HIV to their uninfected partners; the risk of transmission was also higher during the earlier phases of infection.

Although HIV/AIDS affects minority gay and bisexual men at a higher proportion than Caucasian gay and bisexual men, research indicates condom use during anal or oral sex does not significantly differ based on race/ethnicity (Phillips et al., 2011). This indicates that social factors may play a greater role in HIV infection in these persons (Kelly et al., 2010).

In addition to the fact that serosorting does not protect individuals from other sexually transmitted diseases (STDs), the CDC (2011) specifically cites multiple rationales for their nonsupport of serosorting as a mechanism of HIV prevention among MSM. Specifically, they list three main reasons for their position:

- (1) Too many MSM who have HIV do not know they are infected because they have not been

- tested recently;
- (2) Men's assumptions about the HIV status of their partners may be wrong; and
- (3) Some HIV-positive men may not tell or may misrepresent their HIV status. (para. 2)

## The Risk of Transmission of Sexually Transmitted Diseases (Other Than HIV)

While sexual activity negotiation discussions may also include asking potential partners' status regarding STDs other than HIV (e.g., syphilis, chlamydia, herpes, hepatitis, human papilloma virus infection, gonorrhea), serosorting among MSM is more specifically aimed at finding HIV serocordant partners for bareback sex (van den Boom, Stolte, Sandfort, & Davidovich, 2012). And while HIV might be considered the most serious of all STDs because of its lethal potential if left untreated, other STDs can be considered serious and pose a significant risk to one's health. Rates of some STDs are increasing among gay and bisexual men (CDC, 2012). Notifiable disease surveillance data regarding syphilis infections indicate rates are increasing in MSM (CDC, 2012). In fact, while cases of primary and secondary syphilis among all groups of men have increased between 2005 and 2013, the largest increases occurred in MSM (Patton, Su, Nelson, & Weinstock, 2014).

Syphilis is spread in MSM from direct contact with a syphilis sore during anal or oral sex (CDC, 2014b). Primary syphilis is diagnosed with a positive rapid plasma reagin test and other serologic and nonserologic diagnostic tests (Ratnam, 2005). Similar to syphilis, herpes and ano/genital warts also spread from direct contact with an infected partner, who may be with or without symptoms (CDC, 2014c,d). Gay and bisexual men are at increased risk for both ano/genital warts (i.e., HPV infection) and herpetic infection (CDC, 2014c,d). During bareback sex, direct communication of syphilis, herpes, and HPV occurs as a result of direct contact of the penis with infected anal tissue or vice versa. All three can also be spread through oral sex (CDC, 2014b,c,d).

Chlamydia and gonorrhea, which often occur as coinfections (Creighton, Tenant-Flowers, Taylor, Miller, & Low, 2003), are also spread through anal and oral sex behaviors from direct contact with infected penile, anal, or oral tissue; and gay and

bisexual men are at higher risk for infection (CDC, 2014e,f). Bareback sex occurring after the utilization of serosorting to prevent communication of HIV could be considered a high-risk activity for communicating other STDs. Supporting this suggestion are the data by Truong et al. (2006). Their data indicated that, although serosorting among HIV-seropositive individuals resulted in decreases in the incidence of HIV in some areas, it came with the concomitant increase in other STDs.

It is essential to consider that serosorting can consequentially result in unprotected sexual behaviors (Eaton, Kalichman, et al., 2009). Thus, these acts carry risk secondary to the physiologic mechanisms responsible for transmission of STDs other than HIV. So while HIV-seronegative male sex partners may potentially eliminate their risk of HIV transmission during a bareback sexual encounter, there is no physiologic protection from other STDs.

In HIV-seropositive men who serosort for bareback sex, there is the additional risk for HIV superinfection (Eaton, Kalichman, et al., 2009; Poudel, Poudel-Tandukar, Yasuoka, & Jimba, 2007), which results from exposure to multiple strains of HIV-1 (Poudel et al., 2007). Superinfection resulting in recombination increases an HIV-seropositive person's chances of drug resistance, virulence, and altered cell tropism, which can threaten the efficacy of protease inhibitor combination drug therapies (Poudel et al., 2007). This pathophysiologic cascade, in turn, can accelerate HIV disease progression by increasing one's viral load (Poudel et al., 2007).

### **Lack of Current HIV Testing among Gay and Bisexual Men**

Between 2008 and 2011, HIV testing increased among gay and bisexual men in geographic regions with higher prevalence of infection, indicating a possible positive effect from focused HIV testing initiatives (Cooley, Wejnert, Rose, & Paz-Bailey, 2014). However, lack of knowledge of HIV serostatus among gay and bisexual men could be considered a major public health threat and is a significant HIV risk factor (Paz-Bailey et al., 2013). There are many factors associated with lack of HIV testing in gay and bisexual men. Data have suggested that the principle reasons for avoidance of HIV testing include denial of HIV risk factors and fear of actually being HIV seropositive (Kellerman et al., 2002;

Knussen, Flowers, & Church, 2004). However, previous HIV testing and having more sexual partners increases intent to test (Knussen et al., 2004).

In their reporting of the most recent findings from the National HIV Behavioral Surveillance System findings in CDC's *Morbidity and Monthly Report*, Paz-Bailey et al. (2013) showed strong associations between knowledge of HIV serostatus and risky behaviors in MSM. For example, while awareness of HIV-positive serostatus among HIV-infected MSM increased from 56% in 2008 to 66% in 2011, a high percentage of the HIV-seropositive MSM who were previously unaware of their serostatus reported recent unprotected discordant anal sex with a partner of HIV-negative or unknown status (Paz-Bailey et al., 2013). Specifically, the CDC found these men were more than two times likely to engage in unprotected discordant anal sex in contrast with those who were either HIV-seropositive aware or HIV negative (Paz-Bailey et al., 2013).

These findings further strengthen the long held assumption that persons who are aware of their HIV-positive serostatus are less likely to transmit the virus; and that "testing is an essential first step in the care and treatment of those who are HIV-positive" (Paz-Bailey et al., 2013, p. 960). Another major consideration that must be addressed in association with lack of knowledge regarding HIV serostatus is the window period that occurs from the time a person is exposed to HIV to the time when he or she will possess detectable HIV antibodies. Detection of HIV antibodies triggers a positive HIV diagnosis in most common screening tests.

However, the time between initial infection and seroconversion among various HIV antibody tests varies (Wilson, Tanzosh, & Maldarelli, 2013) and is dependent on the competency of an individual's immune response (San Francisco AIDS Foundation, 2014). For example, rapid antibody tests (e.g., Ora-Quick) react within 2–8 weeks after infection, with 97% of HIV-seropositive persons testing as such within 12 weeks (San Francisco AIDS Foundation, 2014). Consequently, the most recent results of an HIV test may not accurately reflect one's serostatus if that person has not had adequate time and/or immune response for HIV antibodies to be detected through a screening test. This emphasizes the effectiveness of serosorting in preventing HIV infection as seriously flawed and constrained by the current methods employed in HIV screening.

## Misperceptions among MSM Regarding Partners' HIV Serostatus

The window period (discussed above) can be a contributing factor toward the misperception of HIV serostatus among gay and bisexual men. While this is rooted more in the pathophysiologic process of HIV infection, there are also psychosocial factors that have been shown to cause some gay and bisexual men to misperceive the HIV serostatus of their sex partners (CDC, 2011). Data from Kelly et al. (2010) indicated that sexual risk taking in MSM was linked with the social network to which they belonged. In other words, the social network to which a man belonged independently predicted a range of his high-risk sexual behaviors (Kelly et al., 2010). This is further illustrated in the epidemiological data of HIV within specific gay and bisexual male populations. Although data indicate African-Americans do not report participating in higher risk activities more than Whites, their HIV rates are substantially higher (Kelly et al., 2010). This strongly suggests that social networks, which have been found to be ethnically similar in makeup in groups of MSM (Kelly et al., 2010), account for some of the perceptions of HIV risk in sexual partners among African-American MSM, a finding also found in the research by Chen et al. (2012).

Other social characteristics also appear to play a role in high-risk sexual decision making in MSM. Chen et al. (2012) found that episodes of barebacking were higher in HIV-seropositive MSM earning between \$30,000 and \$50,000 annually compared to those earning >\$70,000 annually. Thus, socioeconomic status can also be a significant predictor of intent to use condoms during sexual encounters in MSM, indicating differences in assessment of risk based on varying amounts of an individual's income. Eaton, Kalichman et al. (2009) also suggest that ascertaining a sexual partner's HIV serostatus is often based on assumption among MSM rather than explicit discussion. For example, Grov and Crow (2012) hypothesized that men meeting men in bathhouses for sex in their study were less likely to discuss their HIV serostatus with partners because nonverbal communication is more common in bathhouses. This is in contrast to the researchers' findings that men who met their sex partners on the Internet more readily disclosed their HIV serostatus (Grov & Crow, 2012). This

could be perhaps because many online social and sexual networking sites allow specific listing of HIV serostatus within the user's profile. Nonetheless, many online users choose not to disclose their HIV serostatus within profiles.

These data all suggest that MSM are unable to accurately predict the HIV serostatus of their sexual partners, and that the methods they use to do so may be seriously inaccurate. Thus, serosorting could be a futile HIV prevention strategy among HIV-seronegative MSM due to their inability to accurately ascertain the HIV serostatus of their sex partners (CDC, 2011).

## Nondisclosure or Misrepresentation of HIV Status among MSM

Disclosure of one's HIV-positive serostatus can be a very anxiety-provoking activity; and negative reactions by those in whom the individual discloses his or her positive serostatus is often anticipated (Sero-vich, Mason, Bautista, & Tovissimi, 2006). Major findings in the study by Arnold, Rebchook, and Kegeles (2014) in HIV disclosure in HIV-seropositive African-American MSM indicated coping with social rejection rooted in racism and homophobia was often cited when these men chose to engage in bareback sex with other African-American men. Anticipated rejection was also cited as one barrier to disclosure in HIV-seropositive African-American MSM (Arnold et al., 2014).

Negative assumptions in the descriptions of HIV-seropositive MSM are also found in the literature. HIV-seronegative MSM participants in a study by Grov, Agyemang, Ventuneac, and Breslow (2013) described themselves as "clean" and "DDF" (disease and drug free) when describing their sexual health status in online profiles on a Web site used to recruit sex partners. This led the researchers to conclude that, "this language has negative connotations, implying that someone who is HIV-positive is somehow 'dirty' (i.e., not clean) or 'diseased' (i.e., not DDF)" (Grov et al., 2013, p. 81). These associated stigmas could make HIV-seropositive MSM less likely to disclose their HIV status to potential partners.

For example, a study by Eaton, West, Kenny, and Kalichman (2009) found HIV-seropositive gay and bisexual men reported a greater level of reluctance in disclosing their HIV status to

HIV-seronegative men. However, this was also hypothesized by the researchers to have a somewhat protective effect for HIV-seronegative men; the reluctance to disclose could have been a motivating factor for the HIV-seropositive men to seek sex partners who were exclusively HIV seropositive. In addition, altruism has been indicated to be a significant contributing factor to serosorting in HIV-seropositive gay and bisexual men. A significant number of HIV-seropositive gay and bisexual men choose to engage in safer sex practices in an effort to prevent infecting others. For example, O'Dell, Rosser, Miner, and Jacoby (2008) found that HIV-protection altruism significantly protected against discordant unprotected anal intercourse.

One might assume that disclosing one's viral load as being undetectable could potentially be a misrepresentation of his HIV serostatus. Nonetheless, the largest study ever conducted on this topic by Klitzman et al. (2007) showed no statistically significant association between disclosure of HIV status with sex partners and the use of highly active antiretroviral therapy (HAART), viral load, and number of symptoms. However, this same study showed high rates of nondisclosure among HIV-seropositive MSM. Only 46% of the participants in this study disclosed to all partners; 41.8% disclosed to casual partners and 21.5% disclosed to none. In addition, 36.5% of participants reported recent bareback sex with partners of negative/unknown HIV serostatus (Klitzman et al., 2007). For serosorting to be effective at reducing the risk of HIV transmission, the self-reported HIV serostatus of all sex partners must be truthful. However, research on HIV disclosure among HIV-seropositive MSM suggests that, for a variety of reasons, this could be sometimes questionable. Thus, serosorting is further weakened as an HIV prevention approach due to its reliance on subjective self-reporting of one's HIV serostatus.

## Discussion and Clinical Implications

### *Serosorting among HIV-Seropositive Men*

Serosorting, does have some positive aspects, particularly in reducing the spread of HIV to HIV-seronegative men by seropositive men who serosort with other seropositive men (Chen et al., 2012; Eaton, Kalichman, et al., 2009). This sexual

decision-making approach can provide a level of protection to HIV-seronegative men because they would be excluded as potential sexual partners among HIV-seropositive men who are seeking sexual partners who are mutually HIV seropositive. The practice among HIV-seropositive MSM has actually reduced the incidence rates of HIV in certain geographic regions (Truong et al., 2006).

While condom use among gay and bisexual men is declining, serosorting remains a more effective strategy at reducing HIV transmission than consistent lack of use of condoms during anal sex (WHO, 2011). Data from the WHO (2011) systematic review of the literature comparing the efficacy of serosorting with consistent condom use found serosorting reduced HIV transmission by 53% (RR: 0.47, 95% CI: 0.26–0.84) and transmission of sexually transmitted diseases by 14% (RR: 0.86, 95% CI: 0.78–0.98).

However, blatant disregard for condom use coupled with the complete absence of discussion of HIV serostatus among sexual partners during sexual negotiation could be considered riskier than the mutually agreed upon decision to abstain from condom use after a discussion inclusive of self-reported HIV serostatus. This would certainly be true among sexual partners who are mutually HIV seropositive who would not be engaging in sexual activities with HIV-seronegative men; these men would not be responsible for transmitting new cases of HIV.

However, the sole focus on HIV infection as the determining factor for condom use comes at the expense of increasing rates of transmission of other STDs in HIV-seropositive MSM. They remain at risk for other consequential HIV-related disease problems (Paz-Bailey et al., 2013; WHO, 2011). For example, HIV-infected men who are immunocompromised could potentially encounter more serious sequelae from infection with HPV, putting them at greater risk for the development of anorectal carcinoma (Blackwell, 2008a).

### *Serosorting among HIV-Seronegative Men*

The efficacy of serosorting in reducing the risk of HIV transmission in HIV-seronegative gay and bisexual men remains far inferior to consistent use of condoms (Paz-Bailey et al., 2013; WHO, 2011). This inference can be made based on the most recent evidence provided by national and international health organizations and the findings of the

current state of the science on the topic (van den Boom et al., 2012; Chen et al., 2012; Eaton, Kalichman, et al., 2009; Holt, 2014; Kurtz, Buttram, Surratt, & Stall, 2012; Zablotska et al., 2009).

There are no health authorities that recommend serosorting as advantageous to consistent use of condoms during sex. Table 1 provides a summary of findings from the three studies yielded from the extensive systematic review conducted by the WHO (2011) that guided their recommendations. However, in populations where gay and bisexual men refuse to wear condoms or fail to do so during the majority of their sexual encounters (e.g., in certain groups of substance abusers or in some HIV-seropositive MSM as discussed previously), serosorting is clearly one option that can reduce risk (Kurtz et al., 2012; Paz-Bailey et al., 2013; WHO, 2011).

### ***Serosorting, Promotion of Safer Sex, and the Role of the Public Health Professional***

It remains the responsibility of public health nurses and other knowledgeable health workers to educate not only the vulnerable population of gay and bisexual men who remain at highest risk for HIV infection but also other health care professionals who care for them. Approaching topics related to sexuality can be challenging with clients (Ball, Dains, Flynn, Solomon, & Stewart, 2014). However, a direct approach is optimal—the nurse should never apologize for approaching the subject. For example, starting dialog with, “I’m sorry to have to ask you this, but are you gay?” would never be appropriate. In addition, experts recommend avoidance of heterosexist questioning, which would include remarks such as, “Do you have a girlfriend?” or “Are you and your girlfriend sexually active?” (Levine, 2013). Acceptable substitutions might include, “Are you dating anybody?” “Tell me about your partner” or “Are you involved in any romantic or sexual relationships?” (Levine, 2013). Other open-ended statements such as “Tell me about your sexual partners” or “Do you have sex with men, women, or both?” are nonjudgmental ways in which to ascertain a client’s sexual orientation and begin assessment of risk (Ball et al., 2014).

Assessment of the client’s safer sex practices is also essential; asking about consistency of condom use, proactive initiation of dialog regarding HIV and STD status with sex partners before sex, anal

insertive and receptive practices, oral sexual activity, use of substances during sex, and estimating the number of sex partners in the previous 12-month period is paramount information to include in the client’s social history (Ball et al., 2014). Clinicians should also directly ask clients if they serosort their sexual partners; ascertaining information about their beliefs and perceptions about serosorting may also be valuable.

Gay and bisexual men have specific health needs, which include specific vaccination schedules (Blackwell, 2014b) and regular screening for HIV and other STDs (Paz-Bailey et al., 2013). Vaccine schedules vary by the client’s CD4 count, age, and other personal risk factors. But appropriate vaccination can provide protection from some STDs that could be transmitted from bareback sex. For example, depending on the client’s age, vaccination against HPV might help prevent the future development of anorectal carcinoma in both HIV-seronegative and HIV-seropositive men (Blackwell, 2008b).

Another potentially worthy point of discussion with clients concerns the use preexposure prophylaxis therapy (PrEP), in which the client takes a once-daily regimen consisting of Truvada (emtricitabine/tenofovir disoproxil fumarate), to prevent HIV infection. PrEP has been studied in high-risk adults and has found to significantly reduce HIV infection in those who take it on a consistent basis (see Blackwell, 2014a).

Gay and bisexual men should be screened for HIV at least annually; and based on risk, this frequency can be as much as every 3–6 months (Paz-Bailey et al., 2013; WHO, 2011). Nurses and other health care professionals working with gay and bisexual clients need to educate them about the importance of consistent use of condoms during sex, particularly anal sex, because it remains the riskiest sexual behavior in-relation to HIV transmission (Paz-Bailey et al., 2013). Both HIV-seropositive and HIV-seronegative MSM should be taught the benefits and risks of serosorting. And they need to be aware that the major reasons serosorting remains suboptimal in preventing HIV is due to issues surrounding lack of current testing for HIV in the gay/bisexual community, misperceptions among MSM regarding partners’ HIV serostatus, and possible nondisclosure or misrepresentation of HIV serostatus by sexual partners (CDC, 2011).

Public health professionals should assume a greater responsibility in working to decrease the disease burden of HIV in gay and bisexual men. Safer sex fatigue is one of the cited etiologic factors related to increased barebacking among gay and bisexual men (Wolitski, 2005). Thus, it is vital that public health nurses be innovative in devising fresh and novel ways for outreach. Activities that target HIV prevention within social networks (Kelly et al., 2010) and that provide education about the risks and benefits of serosorting at events attracting large numbers of bisexual men, such as gay pride celebrations, could be beneficial.

Because the Internet and smartphone mobile applications are increasingly becoming tools being used by gay and bisexual men to meet sexual partners, public health outreach must include these technologies. For example, banner advertisements embedded on sexually oriented gay male Web sites and mobile applications that link users to a nurse-mediated discussion board designed to provide education regarding STDs have been shown to be effective (Blackwell, 2008b). Similar mechanisms have also been used to promote anonymous testing for STDs and to link clients with community resources for care (Blackwell, 2008b).

There remains concern within the profession that nurses receive suboptimal education pertaining to gay, lesbian, bisexual, and transgender health (Walsh-Brennan, Barnsteiner, De Leon Siantz, Cotter, & Everett, 2012). Both undergraduate nursing students and advanced practice nursing graduate students should be provided with diverse clinical placements, interactions with GLBT interest groups, and clear expectations for the professional development of GLBT cultural competence (Lim, Brown, & Jones, 2013). Future scholarly inquiry on this topic is needed to occur. There are very few data-based studies that have studied serosorting and assessed some of the psychological and motivational factors associated with the behavior. Studies should consist of large, generalizable samples. This can be challenging in gay men's health research, which is often forced to rely on convenience sampling techniques (Meyer & Wilson, 2009).

Nurses play a pivotal role in the U.S. health care system. They are uniquely situated to make major positive impacts on the HIV epidemic. Knowing the benefits and risks of serosorting, and applying this knowledge to the education of gay

and bisexual clients is one way nurses can make a difference. Just as the management of HIV infection and caring for HIV-seropositive clients has dramatically changed over the last several decades, nurses too must evolve and expand their role in helping clients make sexual decisions that optimize individual health and decrease disease burden in at-risk populations and society as a whole.

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