Uncoupling Epidemiological Synergy: New Opportunities for HIV Prevention for Men Who Have Sex With Men

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(See the HIV/AIDS Major Article by Pathela et al on pages 281–7.)

Keywords. men who have sex with men; preexposure prophylaxis; sexually transmitted diseases; HIV prevention; STD prevention.

In recent decades, the gender ratios for several bacterial sexually transmitted diseases (STDs) have shifted [1, 2]. In the United States, syphilis and gonorrhea have become increasingly common in men [3]. The major reason for these demographic shifts is the increasing concentration of bacterial STDs among men who have sex with men (MSM) [4, 5]. Multiple studies have documented this phenomenon in cities across the United States as well as Europe, Asia, and Latin America [3, 4, 6–9]. The findings are clinically significant for persons who are diagnosed with an STD but also pose additional concerns for public health authorities, since the majority of syphilis and rectal gonorrhea cases are asymptomatic [10–12]. Consequently, once an infection becomes established in a subpopulation, the likelihood of MSM encountering the infection with any new partner is much greater than the risk a heterosexual person might face, given that the pool of potential MSM partners is significantly greater [13]. This is particularly true for racial and ethnic minority men in some settings because of assortative mixing, the increased likelihood of selecting a partner with similar demographic characteristics, the concentration of human immunodeficiency virus (HIV), and STD prevalence among individuals who are a minority within a minority [3, 14]. Some MSM may prefer to have multiple partners, and recent increases in mobility with modern transportation, the creation of sexualized venues such as bathhouses, as well as more efficient means of meeting partners through electronic media, facilitate the rapid expansion of STD and HIV epidemics [15, 16]. An increasing body of literature also suggests that for some MSM, the patterns of behavior that may lead to frequent condomless sex with multiple partners may be triggered by underlying depression and substance use that stem from growing up in nonaffirming environments [17].

The increases of STDs in MSM are intrinsically serious but also reflect, and exacerbate, challenges to the control of the global HIV epidemic. The epidemiological synergy between HIV and STDs has been recognized for several decades [18]. HIV may be more efficiently transmitted when concomitant STDs are present because of their ability to disrupt anogenital mucosal integrity and through the generation of local inflammatory responses, which recruit HIV target cells and elaborate cytokines that upregulate HIV replication [19]. In this issue of Clinical Infectious Diseases, Pathela et al [20] reveal that 15.1% of all patients attending New York City STD clinics who were diagnosed with syphilis subsequently became HIV-infected (with an annualized rate of 5.56% in MSM). These HIV rates are very high compared with rates seen in clinical trials [21], and the annualized HIV incidence among the MSM in the New York sample who had a prior STD before being diagnosed with syphilis was even higher, at 7.89%.

Received 26 March 2015; accepted 1 April 2015; electronically published 13 April 2015.
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Clinical Infectious Diseases® 2015;61(2):288–90
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DOI: 10.1093/cid/civ291
Until recently, the public health approach to these findings would be to suggest that all MSM who are diagnosed with a recent STD should be immediately screened for HIV and provided counseling about ways in which they can limit their risk of acquiring HIV. Given the continued high rates of incident HIV among MSM in the United States (where they accounted for about two thirds of newly diagnosed infection in 2013 [22]) and globally (MSM are associated with the majority of incident HIV infections in Europe, Latin America, and Southern Asia [23]), relying on counseling has not been sufficient. The advent of antiretroviral preexposure prophylaxis (PrEP) may prove to be the game changer if increased on a sufficiently large scale. Almost 5 years ago, the iPrEx trial, a multinational placebo-controlled study of daily oral tenofovir–emtricitabine vs placebo in men and transgender women who had sex with men, demonstrated the efficacy of PrEP [24]. Some were concerned that the intent-to-treat level of efficacy was 44% and could be attenuated by suboptimal medication adherence plus behavioral disinhibition because of perceived protection. However, post hoc analyses found that protection was close to 100% among those who were consistent users, and those who maintained drug levels consistent with using the medication at least 4 times a week did not become infected [25, 26].

Two recent randomized studies have corroborated the high level of PrEP efficacy in European and Canadian MSM [27, 28], and reports from US demonstration projects have suggested that the majority of MSM who elected to initiate PrEP were able to maintain protective drug levels [29].

If optimally deployed, antiretroviral PrEP could substantially decrease HIV incidence among MSM, but unintended consequences must be anticipated and avoided. If MSM on PrEP are highly adherent but continue to engage in condomless intercourse, their risk for HIV might decrease at the same time that their risk for STDs increase. Thus, PrEP must be construed as part of a comprehensive sexual health strategy in which potential PrEP users are identified, educated, regularly counseled, and screened for STDs. For this approach to be successful, health professionals need to be comfortable when discussing sexual behavior with their patients in order to determine who might benefit from STD screening and PrEP. Unfortunately, multiple studies suggest that many providers may not be comfortable when discussing sexuality or sexual behaviors with patients and thus may miss many opportunities for health education, STD screening, and PrEP evaluation [30, 31]. Fortunately, an increasing array of written and online tools are now available [32, 33], and primary care providers and HIV specialists should be able to develop the skills needed to be part of the solution to the disproportionate disease burden of HIV and STDs among MSM. The diffusion of innovation in medical practice can sometimes take a long time to become established [34]. However, if the 2 million annual HIV infections are to be substantially reduced as quickly as possible, provider comfort in discussing sexual behavior and knowledge about STD screening and PrEP provision must become part of a comprehensive biobehavioral approach [35].

**Note**

**Potential conflict of interest.** D. S. K. reports grants from Gilead Sciences and Bristol Myers Squibb and receipt of personal fees from Medscape during the conduct of the study. K. H. M. has an unrestricted research grant from Gilead Sciences. Both authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

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