

The Reemerging HIV/AIDS Epidemic in Men Who Have Sex With Men

Harold W. Jaffe, MD, MA, FFPH

Ronald O. Valdiserri, MD, MPH

Kevin M. De Cock, MD, FRCP, DTM&H

SINCE THE FIRST REPORT OF AIDS IN 5 MEN WHO HAVE sex with men (MSM) from Los Angeles,¹ MSM have accounted for a higher proportion of AIDS cases than any other group in countries such as the United States (44%), Canada (65%), and Australia (64%).²⁻⁴ Although MSM first brought human immunodeficiency virus (HIV)/AIDS to the world's attention and, even in the absence of external funding, were the first to promote risk reduction strategies, prevention efforts for MSM appear to have faltered.

In this article, we examine current HIV/AIDS epidemiology in MSM, discuss why the epidemic may be re-emerging, and describe what can be done to address it. Although there is recognition and reporting of MSM with HIV/AIDS from low-income and middle-income countries, including those in Africa and Asia where interventions for MSM are few, cultural stigma may be strong, and homosexuality may be illegal,^{5,6} this article is limited to industrialized countries and focuses particularly on the United States.

Trends in HIV/AIDS, Other Sexually Transmitted Infections, and Risk Behaviors in MSM

The number of MSM reported with HIV/AIDS is now increasing in many countries. The estimated number of US cases of HIV/AIDS among MSM by year of diagnosis in the 33 states and US dependent areas with confidential named-based HIV reporting increased from 16 167 in 2001 to 18 296 in 2005, a 13% increase.² Thirteen western European countries reported a 55% increase in HIV cases among MSM (from 3180 in 1998 to 4935 in 2005).⁷

Although the sexual practices most likely to transmit HIV and other sexually transmitted infections are not always the same, the 10-fold increase in primary and secondary syphilis cases reported among MSM in the United States from 2001 to 2005 is a further indication of increasing frequency of unprotected sex.⁸

Recent US surveys of MSM document high rates of unsafe sex. Approximately 10 000 MSM participated in the National HIV Behavioral Surveillance System, which excluded men who knew they were infected with HIV.⁹ Of the more than 4000 men who did not know the HIV infection status of their male

sex partner, 21% reported having had unprotected anal intercourse during their most recent sexual contact with that partner.⁹ In 2 population-based, random-digit-dial telephone surveys of MSM households in San Francisco, Osmond et al¹⁰ found an increase in the proportion of men reporting unprotected anal intercourse with a partner of different or unknown serostatus from 9.3% in 1997 to 14.6% in 2002.

Why Is This Happening?

Using a back-calculation method, Brookmeyer¹¹ estimated that the first HIV infections among US MSM occurred around 1978. The incidence peaked in 1984 and then decreased during the rest of the decade. The decrease most likely resulted from the combined effects of saturation (many MSM at highest risk were already infected), death of core transmitters (infected men with very large numbers of sex partners), and behavioral changes.

At least some of these initial behavioral changes probably resulted from fear of acquiring this lethal new disease. Many MSM had already died, many more were sick, and no effective treatment existed. Both the gay media and leadership also actively promoted sexual risk reduction. Because little public funding for HIV prevention was available, the gay community relied on its own resources and developed a collective will to survive that embraced safer sex norms.

In 2007, AIDS is simply not as frightening as it was before highly active antiretroviral therapy (HAART) became available. Most individuals infected with HIV can now lead reasonably healthy lives if diagnosed early and can access and adhere to treatment. Instead of a terminal illness, some have likened HIV/AIDS to a chronic, treatable condition, although outcomes beyond 10 to 12 years of treatment are unknown. Younger MSM have largely been spared the visible devastation of untreated HIV infection. Most US residents no longer view AIDS as a major health threat¹² and person-to-person communication about the disease, an important factor in reducing risk behavior, may be decreasing.¹³

Whether the availability of HAART contributes to high-risk behavior is not clear. A meta-analysis of 25 studies, more

Author Affiliations: Department of Public Health, University of Oxford, Oxford, England (Dr Jaffe); Office of Public Health and Environmental Hazards, US Department of Veterans Affairs, Washington, DC (Dr Valdiserri); and Department of HIV/AIDS, World Health Organization, Geneva, Switzerland (Dr De Cock).

Corresponding Author: Harold W. Jaffe, MD, MA, FFPH, Department of Public Health, University of Oxford, Old Road Campus, Headington, Oxford OX3 7LF, England (harold.jaffe@dphpc.ox.ac.uk).

than half of which included MSM, found no significant association between HAART use and increased rates of unprotected sex.¹⁴ However, unprotected sex was significantly more common in individuals who believed that HAART decreased HIV transmission. Based on preliminary data from a more recent study from the Netherlands, Bezeemer et al¹⁵ described a 37% increase in the annual number of new HIV diagnoses among MSM since the introduction of HAART. This finding was attributed to increasing risk behavior offsetting the effect of HAART in reducing HIV transmission.

Lack of awareness of HIV infection status is a likely reason for continuing high-risk behaviors in MSM. A venue-based study of more than 5000 MSM aged 15 to 29 years in 6 US cities found that 10% of the men were infected with HIV; of these men, 77% were unaware of their infection (91% of black MSM with infection were unaware of being infected).¹⁶ Of men reporting that their last HIV test result was negative, 8% were found to be infected (21% of black MSM reporting a negative test result were found to be infected). Almost 60% of men who were unaware of their infection considered themselves to be at low risk for HIV infection.¹⁶ Infrequent testing by MSM who believe they are uninfected would also weaken the risk-reduction strategy of serosorting, in which partners who believe they have the same serostatus engage in unprotected sex.

Other factors are also likely to contribute to unsafe sexual behaviors in MSM. For example, in a longitudinal study of more than 4000 MSM in 6 US cities, substance abuse, particularly with methamphetamines and alcohol, was an independent risk factor for HIV infection.¹⁷ This risk presumably involves sexual disinhibition and impaired judgment in individuals under the influence of these substances.

Biomedical and Behavioral Interventions

Because many MSM are unaware of their HIV infection status, testing rates should be increased. The US Centers for Disease Control and Prevention (CDC) has recently recommended HIV screening for patients in all health care settings using an opt-out model (patients are notified that testing will be performed unless they specifically decline).¹⁸ For persons at increased risk for infection, such as MSM, screening is recommended at least annually.¹⁸

One of the rationales supporting the CDC guidelines is that risk behavior often decreases after individuals learn of their HIV infection. In a meta-analysis of studies in which rates of high-risk sex in individuals before and after they became aware that they were infected were examined,¹⁹ high-risk behavior decreased after notification of a positive HIV test result. Furthermore, in a model adjusted to exclude known infected partners, the average reduction in risk behavior was approximately two-thirds.

Recent recommendations from the US Task Force on Community Prevention Services are based on strong evidence that individual-level and group-level risk reduction inter-

ventions are effective in changing sexual behaviors among MSM.^{20,21} However, findings from the reviewed studies may not be generalizable to all MSM, especially non-gay-identified MSM, racial and ethnic minority MSM, or substance-using MSM.²¹ How well behavioral interventions will work over time or when translated from research into practice is not known. For MSM whose risk behaviors are related to use of methamphetamines, alcohol, or other drugs, provision of appropriate substance abuse services will be needed. Mental health services will be needed for MSM whose behaviors may be influenced by mental illnesses, including depression.

Roles of other biomedical interventions to reduce HIV transmission between MSM remain uncertain. Male circumcision has been shown to reduce the infection risk in heterosexual African men by approximately 60%,²² but the potential role of circumcision for HIV prevention in MSM is unknown. Trials of preexposure prophylaxis, herpes simplex virus suppression, and HIV vaccines in MSM are in progress, and early studies of rectal microbicides have begun.

Leadership, Community, and Personal Action

Until the development of more effective interventions, the response to the MSM HIV/AIDS epidemic must rely more heavily on leadership (both within the MSM community and among public health officials), community mobilization, support for risk reduction, and increased emphasis on personal action. These issues, although potentially sensitive and stigmatizing, should be discussed openly and free from "political correctness."

Leadership is needed to advocate for adequate research on and implementation of effective programs and to engage credibly with communities at risk. In the 1980s, many leaders emerged within the gay community to address the need for risk reduction, despite criticisms from some of their peers that these leaders were undermining hard-won rights of sexual expression. Since then, many of these leaders have died or taken up other causes, such as HIV treatment advocacy. Although availability of treatment is critical, it is only a part of the needed response. If MSM continue to become infected, demands on treatment services will continue to increase.

In addition to re-energizing the call for safer sexual behaviors, new leaders must call for the end of stigma toward MSM, which may mitigate the internalization of homophobia leading to sexual risk behavior.²³ This need is particularly critical within racial and ethnic minority MSM communities that bear the stigma of homosexuality along with the discrimination faced by these minorities. Political leadership is also needed to advocate for legal domestic partnerships as a way to promote stable, longer-term MSM relationships.²⁴

Community mobilization of MSM was an important feature of the early response to HIV/AIDS when the aphorism "silence equals death" captured the need for action. Many

community-based organizations were founded to address this challenge, and the need for their advocacy and health promotion activities remains critically important today.

Because most HIV transmission between adults is the result of voluntary behavior, individuals can substantially influence the likelihood that they will either acquire or transmit HIV. A good example of an approach to personal responsibility is the "HIV Stops With Me" social marketing campaign, which emphasizes the role that HIV-positive individuals can take in ending the epidemic.²⁵ Although this approach might be criticized for "blaming the victim," that is not the intent; instead, it acknowledges the importance and need for personal action.

Realistic Prevention Goals

Any realistic approach to HIV prevention must acknowledge the limits of public health. Public health can only be as effective as the tools available and the collective will to use them. When a tool is highly effective and has a lasting effect, such as a vaccine, diseases can be controlled or even eradicated. When the tools require changing behaviors and maintaining behavioral changes over time, success will be more difficult to achieve.

In an effort to increase the effect of a behavioral intervention, it may be tempting to exaggerate the danger of the condition to be avoided. However, such tactics are morally questionable and may ultimately be counterproductive. It may also be tempting to introduce legal penalties for unsafe sex; however, with the rare exception of penalties for intentional exposure to HIV, this approach is unacceptable in free societies. Although emphasizing individual and community responsibility may seem overly moralistic, establishment of community norms of safe behavior can play a key role in addressing the MSM HIV/AIDS epidemic.

Conclusions

"Silence equals death" may unfortunately be regaining relevance for some MSM. Despite advances in HIV/AIDS care, almost 6000 MSM with AIDS in the United States died in 2005,² and living with HIV/AIDS is challenging. However, despite strong evidence for a re-emerging HIV/AIDS epidemic in MSM, silence on this subject is nearly pervasive.

Public health has limits and should not promise more than it can deliver. Nonetheless, advances can occur through open discussion, increased HIV testing, funding to develop and implement evidence-based public health interventions, leadership from the gay community and public health officials, and recognition of the role of personal action. Failure to address these difficult issues implies that the HIV/AIDS epidemic in MSM must be accepted as inevitable; this cannot be allowed to happen. The tragedy of the epidemic for an earlier generation of MSM must not be repeated.

Financial Disclosures: None reported.

Disclaimer: This work is solely the responsibility of the authors and does not represent official views of their employing organizations.

Additional Contributions: Susan Buchbinder, MD, and Paul O'Malley, BA (retired), San Francisco Department of Public Health, provided helpful comments. Neither received any compensation for their contributions.

REFERENCES

- Centers for Disease Control. *Pneumocystis pneumonia*—Los Angeles. *MMWR Morb Mortal Wkly Rep*. 1981;30(21):250-252.
- US Department of Health and Human Services, Centers for Disease Control and Prevention. Cases of HIV infection and AIDS in the United States and dependent areas, 2005. <http://www.cdc.gov/hiv/topics/surveillance/resources/reports/2005report/default.htm>. Accessed July 1, 2007.
- Public Health Agency of Canada. HIV and AIDS in Canada: surveillance report to June 30, 2006. <http://www.phac-aspc.gc.ca/aids-sida/publication/>. Accessed July 1, 2007.
- National Centre in HIV Epidemiology and Clinical Research. HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2006. <http://web.med.unsw.edu.au/nchechr/>. Accessed July 1, 2007.
- van Griensven F. Men who have sex with men and their HIV epidemics in Africa. *AIDS*. 2007;21(10):1361-1362.
- Steinbrook R. HIV in India: a complex epidemic. *N Engl J Med*. 2007;356(11):1089-1093.
- European Centre for Epidemiological Monitoring of AIDS. HIV/AIDS surveillance in Europe: end-year 2005: report no. 73. http://www.eurohiv.org/mainframe_eng.htm. Accessed July 1, 2007.
- Heffelfinger JD, Swint EB, Berman SM, Weinstock HS. Trends in primary and secondary syphilis among men who have sex with men in the United States. *Am J Public Health*. 2007;97(6):1076-1083.
- Sanchez T, Finlayson T, Drake A, et al; Centers for Disease Control and Prevention. Human immunodeficiency virus (HIV) risk, prevention and testing behaviors—United States, National HIV Behavioral Surveillance System: men who have sex with men, November 2003–April 2005. *MMWR Surveill Summ*. 2006;55(6):1-16.
- Osmond DH, Pollack LM, Paul JR, Catania JA. Changes in prevalence of HIV infection and sexual risk behavior in men who have sex with men in San Francisco: 1997–2002. *Am J Public Health*. 2007;97(9):1677-1683.
- Brookmeyer R. Reconstruction and future trends of the AIDS epidemic in the United States. *Science*. 1991;253(5015):37-42.
- The Henry J Kaiser Family Foundation. Kaiser Public Opinion Spotlight. <http://www.kff.org/spotlight/hivus/1.cfm>. Accessed October 1, 2007.
- Valdiserri RO. Mapping the roots of HIV/AIDS complacency: implications for program and policy development. *AIDS Educ Prev*. 2004;16(5):426-439.
- Crepaz N, Hart TA, Marks G. Highly active antiretroviral therapy and sexual risk behavior: a meta-analytic review. *JAMA*. 2004;292(2):224-236.
- Bezemer D, de Wolf F, Boerlijst M, et al. Despite HAART, HIV-1 is once again spreading epidemically among men having sex with men in the Netherlands. In: Program of the 14th Conference on Retroviruses and Opportunistic Infections; February 25–28, 2007; Los Angeles, CA. Abstract 151.
- MacKellar DA, Valleroy LA, Secura G, et al. Unrecognized HIV infection, risk behaviors, and perceptions of risk among young men who have sex with men. *J Acquir Immune Defic Syndr*. 2005;38(5):603-614.
- Koblin BA, Husnik M, Colfax G, et al. Risk factors for HIV infection among men who have sex with men. *AIDS*. 2006;20(5):731-739.
- Branson BM, Handsfield HH, Lampe MA, et al; Centers for Disease Control and Prevention. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Recomm Rep*. 2006;55(RR-14):1-17.
- Marks G, Crepaz N, Senterfitt JW, Janssen RS. Meta-analysis of high-risk sexual behavior in persons aware and unaware they are infected with HIV in the United States. *J Acquir Immune Defic Syndr*. 2005;39(4):446-453.
- Herbst JH; Task Force on Community Preventive Services. Recommendations for use of behavioral interventions to reduce the risk of sexual transmission of HIV among men who have sex with men. *Am J Prev Med*. 2007;32(4)(suppl):S36-S37.
- Herbst JH, Beeker C, Mathew A, et al. The effectiveness of individual-, group-, and community-level HIV behavioral risk reduction interventions for adult men who have sex with men. *Am J Prev Med*. 2007;32(4)(suppl):S38-S67.
- Newell ML, Barnighausen T. Male circumcision to cut HIV risk in the general population. *Lancet*. 2007;369(9562):617-619.
- Huebner DM, David MC, Nemeroff CJ, Aiken LS. The impact of internalized homophobia on HIV prevention interventions. *Am J Community Psychol*. 2002;30(3):327-348.
- Klausner JD, Pollack LM, Wong W, Katz MH. Same sex domestic partnerships and lower-risk behaviors for STDs, including HIV infection. *J Homosex*. 2006;51(4):137-144.
- HIV Stops With Me. Positive people preventing HIV. <http://www.hivstopswithme.org/>. Accessed July 1, 2007.