

# The Value and Challenge of Frequent Human Immunodeficiency Virus (HIV) Testing Among Young Men Who Have Sex With Men in the United States

Bruce R. Schackman<sup>1</sup>

(See the Major Article by Neilan et al on pages e1927–35.)

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New human immunodeficiency virus (HIV) diagnoses among young men who have sex with men (YMSM) account for 1 in 5 new HIV infections in the United States [1], with HIV prevalence estimated at 13.6% in 18–24-year-old men who have sex with men (MSM) and 18.5% in 25–29-year-old MSM [2]. Blacks and Latinos account for more than three-quarters of new HIV infections among adolescents and young adults [3], which is consistent with results of a simulation model of HIV incidence among YMSM that found that racial disparities were driven by differences in the HIV prevalence of YMSM partners [4]. Adolescent Medicine Trials Network for HIV/AIDS Interventions (ATN) studies 110 and 113 reported a disturbing HIV incidence of 6.4/100 person-years in 15–17-year-old MSM and 3.9/100 person-years in 18–22-year-old MSM despite exposure to pre-exposure prophylaxis (PrEP) in over half the participants at 4 weeks; notably the majority of participants were non-White or White Hispanic [5].

Despite these increased risks and the potential greater lifetime health benefit of avoiding HIV transmission in youth, no specific guidelines have been developed for HIV screening of YMSM and screening is particularly rare in adolescent MSM [6]. Screening strategies need to take into account not only the benefits for YMSM but also potentially different costs of reaching them. YMSM are less likely to have a usual source of healthcare compared to older MSM [7], and only 28% of HIV negative urban YMSM report participating in an individual or group-level HIV prevention program [2]. Existing HIV prevention programs may not effectively engage YMSM because they do not address their unique needs, including interventions that address the developmental context of emerging adulthood [8].

Neilan and colleagues [9] used a well-established simulation model (CEPAC [Cost-effectiveness of Preventing AIDS Complications]) to examine the cost-effectiveness of alternative HIV screening strategies in YMSM in the United States starting from age 15, taking into account risks of HIV transmission among YMSM reported in the ATN trials. They conducted extensive sensitivity analyses and considered prevention benefits only to the individual tested, which represents the most conservative approach to measuring benefit. Alternatively, they also included the benefits of avoiding subsequent transmissions by the

individual tested, which still represents a modestly conservative approach because it does not include potential benefits of avoiding further onward transmissions. The findings support a recommendation for HIV screening of YMSM at least every 3 months, which is consistent with current recommendations for monitoring of individuals receiving PrEP [10].

Importantly, Neilan et al also provide a value for investing in HIV screening in YMSM of up to \$760 per screen at a frequently used willingness-to-pay threshold of \$100 000/QALY. This value may also be viewed as conservative, as the authors took a healthcare system perspective that does not include other potential societal benefits such as productivity effects. Additionally, their approach does not take account of further transmission benefits if screening can be delivered in ways that address racial and ethnic disparities [11]. Delivering HIV screening tailored to YMSM in ways that address these disparities is critical, given the high prevalence and incidence of HIV in Black and Latino YMSM reported in surveys and the ATN trials. Developing and delivering these interventions can be costly, although use of electronic health interventions and at-home self-testing options may be effective and scalable [12, 13].

Of course, although investing a relatively generous \$760 per screen can provide value over the long-term, it is not necessarily affordable for cash-strapped public

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Correspondence: B. R. Schackman, Department of Population Health Sciences, Weill Cornell Medicine 425 East 61st St, Ste 301, New York, NY 10065 (brs2006@med.cornell.edu).

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health agencies and healthcare systems where HIV testing normally costs \$18–\$54 per nonreactive screen in 2018 US dollars [14, 15]. More importantly, the true value of HIV testing of YMSM can only be determined after taking into account access to PrEP. With the first generic version of tenofovir set to reach the US market later this year, broader access to affordable PrEP could enhance the impact of and adherence to frequent testing; recent positive results for long-acting PrEP are also encouraging for individuals who find adherence to oral PrEP challenging. The results reported by Neilan et al remind us that these advances need to build on a solid foundation of frequent HIV testing for YMSM, and that we need to invest now in developing, testing, and implementing developmentally and culturally appropriate interventions if we are to achieve the goal of ending the HIV epidemic in YMSM.

## Notes

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