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The Potential Pitfalls of Targeted Screening for Acute HIV Infection: The View From New York City

To the Editor—We read with great interest the article by Pilcher et al [1] describing forthcoming technological advances in human immunodeficiency virus (HIV) rapid testing, and the promise of new tools for improving detection of acute HIV infection (AHI). We share the authors’ enthusiasm for the promise of new tools for improving detection of acute HIV infection and prevention of new infections, but recognize several important limitations of current AHI screening practices.

Nearly 4000 individuals are diagnosed with HIV infection annually in New York City (NYC). The NYC Department of Health and Mental Hygiene has been conducting AHI surveillance since 2008, and the number of reported AHI cases, although small, has increased each year [2]. Current screening practices are successful in identifying AHI among men who have sex with men (MSM), who comprise three-quarters of AHI cases. Surveillance data, however, reveal important differences between AHI cases and new HIV diagnoses overall: Only 5% of AHI cases are among women (vs one-quarter of new diagnoses), and 77% of male AHI cases occur in MSM (vs half of new diagnoses) [3]. The misaligned profiles of AHI and all HIV cases in NYC suggest biased detection of AHI.

Although differences in HIV testing frequency among demographic and risk groups likely play a role, AHI screening practices also contribute to the discordance. Pilcher et al advocate for targeted AHI screening in high-risk populations, citing cost-effectiveness [1]. Indeed, the shift from universal to targeted AHI screening in NYC decreased cost-per-case without compromising case ascertainment (NYC Department of Health and Mental Hygiene, unpublished data). However, targeted AHI screening operates as a self-fulfilling prophecy: groups with high infection rates tend to be more frequently diagnosed with HIV (eg, because of differential access to HIV testing, higher awareness or risk perception due to prevention messaging) and are targeted for AHI screening; screening programs, in turn, disproportionately identify members of these groups. Conversely, groups not targeted tend to be less frequent testers, despite potentially high infection rates. Recognizing that all HIV-infected persons were acutely infected at some point promotes the view that HIV diagnoses outside the acute phase represent missed opportunities.

With so few of the nearly 1000 female HIV diagnoses annually in NYC being diagnosed in the acute phase, there is a clear need to improve AHI detection among women. Better detection will rely, in part, on increasing testing rates, for example by expanding HIV testing outside traditional high-risk venues (eg, STD clinics). Women of reproductive age are an important group: two-thirds of female HIV diagnoses in NYC in 2008 were among those aged 15–45 years [3]. Furthermore, risk of HIV acquisition during pregnancy is high [4]. National guidelines recommend HIV testing for all pregnant women, with third-trimester repeat testing for high-risk women or those living in high-burden jurisdictions [5]. In NYC, roughly 240,000 women give birth each year, and more than 95% receive prenatal HIV testing [6]. Nonetheless, there are several cases each year of new HIV infections among pregnant women in their third trimester who had tested negative earlier in the pregnancy [7]. Universal prenatal HIV testing, alongside routine repeat testing and AHI screening for previously HIV-negative women, would optimize identification of AHI in this group.

Expansion of targeted AHI screening to venue-based screening among high-risk women could also improve detection rates. For example, a 2006 Department of Health and Mental Hygiene serosurvey in the NYC correctional system found an HIV prevalence rate among newly incarcerated women 14 times higher than the rate for women in the general NYC population [8]. With about 10,000 women entering the Rikers Island correctional system each year, an estimated 1000 will be HIV-infected. Despite potential logistical challenges [9], AHI screening at intake with rapid test technologies could increase early detection of HIV infection among a large, high-risk group of women.

Several important recent or ongoing activities in NYC should facilitate expanded testing. First, New York State’s HIV testing law was amended on 1 September 2010 to encourage providers to offer HIV testing in outpatient and primary care settings, and remove potential barriers to testing such as requiring written informed consent. Second, 2 major Department of Health and Mental Hygiene–sponsored testing campaigns are under way in high-burden NYC counties. Third, the NYC Department of Health and Mental Hygiene has begun a large study to evaluate new rapid testing technologies for AHI detection. If proven feasible and effective, introduction of rapid AHI testing platforms into a setting such as
NYC with well-developed logistical infrastructure should help identify people in whom AHI is not traditionally detected.

Despite the cost-effectiveness of targeted testing with currently available HIV tests, there is an urgent need to identify less frequent testers (women, non-MSM men) who are likely to benefit from earlier detection. As laboratory means of distinguishing AHI among all HIV-positive individuals become more efficient, available, and cost-effective, and as the routine use of HIV testing begins to have its intended effect of diagnosing HIV earlier in its course, we expect to see the profile of individuals diagnosed early in HIV infection broaden and eventually mirror the distribution of new HIV diagnoses.

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**References**


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