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BRIEF COMMENTARY

Infectious Disease

How to best conduct universal HIV screening in emergency departments is far from settled

Daniel J. Escudero PhD, MPH[1] | **Monica Bahamon MPH**[2] | **Patricia Panakos MD**[2] | **Daniel Hercz MBBS, MSc**[2] | **George R. Seage III DSc, MPH**[1] | **Roland C. Merchant MD, ScD**[3]

[1] Department of Epidemiology, Harvard T.H. Chan School of Public Health, Boston, Massachusetts, USA

[2] Department of Emergency Medicine, Jackson Memorial Hospital, Miami, Florida, USA

[3] Department of Emergency Medicine, Brigham and Women's HospitalHarvard Medical School, Boston, Massachusetts, USA

Correspondence
Daniel J. Escudero, PhD, MPH, Department of Epidemiology, Harvard T.H. Chan School of Public Health, Boston, MA, USA.
Email: escudero@hsph.harvard.edu

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Abstract

HIV screening in the emergency department (ED), including universal screening irrespective of risk assessments, has shown strong promise in past studies, identifying many new cases of HIV infection among those who lack access to traditional HIV testing services. Yet, over the years a consistent set of challenges and limitations have presented themselves in settings throughout the United States. We review considerations for evaluating and improving the success of ED-based HIV screening programs in the United States.

KEYWORDS
emergency department, HIV screening, linkage to care

Since 2006, the U. S. Centers for Disease Control and Prevention (CDC) has recommended that emergency departments in the United States should conduct universal HIV screening without regard to patient-reported HIV risk in settings with high HIV prevalence.[1] These guidelines expanded on those CDC made earlier to include recommendations for opt-out testing, along with discouraging requirements for pretest counseling and separate written consent for HIV screening.[1,2] The CDC stated the new guidelines were meant, among other things, to increase HIV screening participation among ED patients, as well as encourage hospitals and clinical staff to screen their patients for HIV.

1 | SUCCESS IN ED-BASED HIV SCREENING

HIV screening in emergency departments has shown great promise. It has been shown to successfully test people who have not been tested for HIV previously,[3] and can be a crucial access point for testing those who use the ED as their main source of health care. These strengths are critical in identifying infections among those who lack access to traditional testing programs. ED-based screening programs also boast a strong track record for identifying acute HIV infections,[4] possibly owing to patients seeking health care for common "viral syndrome" symptoms that arise from an acute HIV infection. This excellent

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opportunity to identify and effectively treat patients recently diagnosed with HIV can limit the risk of subsequent transmission to others at a time when they are highly infectious and typically unaware of their HIV status. ED-based HIV screening programs also have the advantage of being able to test large populations of people in their communities and catchment areas. Universal HIV screening programs in some of the busiest EDs in the United States have on the order of 100,000 potentially eligible patient visits a year.[3,5–7]

Universal, non-risk targeted HIV screening programs in the ED provide an effective alternative to clinical risk- or symptom-based assessments that otherwise miss those without self-reported risk. Studies in Oakland and Chicago found that 59% and 42% of their respective new HIV diagnoses identified through universal screening in the ED would not have met criteria for HIV screening based on risk and symptom assessments.[8,9] Moreover, a trial conducted from 2008 to 2010 found that universal testing in the ED diagnosed more HIV infections than targeted testing, while also maintaining similar test positivity and acceptance rates as targeted testing.[10]

2 | CHALLENGES AND THE NEED FOR CONTINUED EVALUATION

Despite the notable successes of ED-based HIV screening,[3,11–13] significant obstacles to the efficiency and effectiveness of ED screening programs exist: poor linkage to care,[7,14] high cost per positive diagnosis,[15] low test acceptance among marginalized populations,[3,16] ineffective HIV screening staffing models,[17,18] redundant testing of patients with prior HIV diagnoses,[5] and lack of cultural competency incorporated into testing initiatives.[19,20] Although we have observed the successes and limitations of ED HIV screening programs for years, strategies to optimize program components, approaches, and methods are lacking. In 2010, Torres provided a comprehensive look at the implementation of existing ED HIV screening programs, highlighting many challenges that still remain.[20] A decade later, it is time to develop and test approaches on how to overcome the well-known limitations of these programs. These approaches should include a focus on who the screening programs successfully enroll, what outcomes this observed population has in new diagnoses and linkage to care, and how to maximize the desired outcomes. Given the disparities in reported outcomes to this date and across settings, continuous evaluation is needed to understand the benefits and limitations of a given program.

The CDC recommends universal HIV screening in the ED for high-risk settings, but protocols and guidance are not given,[20] leading to diverse applications and models. Diversity may in fact be key to the application of screening programs in settings with distinct challenges, yet this has also led to confusion on the efficacy and effectiveness of such approaches. Descriptions of screening protocols (particularly their evolution) and reporting of epidemiological and clinical outcomes from diverse settings is an important step in informing programs that are either fledgling or have encountered obstacles.[3,6,13,19] Thorough reporting of these data allows for a collective appraisal and iterative reappraisal of best practices. Perhaps even more important, a diverse literature might further demonstrate that no single best practice modality exists. EDs can then heed guidance from programs that experience challenges similar to their own—even if this represents only a baseline in their evolution toward a more effective program.

3 | CRITICAL OUTCOMES TO CONSIDER

Even in settings with protocols for near-universal HIV screening, the successful delivery of tests to eligible patients (ie, number screened among all eligible) can differ substantially. Many factors influence this yield, including the roles staff members play in the screening process. Further complicating guidance on this matter, the optimal HIV screening staffing configuration could differ among settings. In fact, the results from studies involving either clinician- or counselor-initiated programs have shown conflicting performance results in test delivery to patients.[17,18] Existing and future screening programs should consider which HIV screening staffing models can provide the best opportunity for success.

Cost is an important factor when considering the sustainability of a screening program. Importantly, the U.S. Preventive Services Task Force recommends HIV screening in adolescents and adults aged 15—65[21] regardless of risk, which may ease third-party billing for testing services. Although this may not cover all costs associated with screening administration, it provides a source to defray some cost of HIV screening. In certain settings, such as those with low HIV incidence or prevalence of undiagnosed infection, the cost of HIV screening can indeed be prohibitively high or at least inefficient.[15] This concern is warranted, yet studies in some settings have found routine HIV screening to be cost effective.[22,23] as well as more cost effective per quality-adjusted life year (QALY), when compared to other commonly screened conditions.[24] A quasi-experimental study in a large Denver ED found that although the cost per newly diagnosed HIV case was higher among patients receiving non-targeted HIV screening compared to traditional diagnostic screening ($9,932 vs $7,839, respectively), the *incremental* cost per additional HIV diagnosis for non-targeted testing was only $10,693,[25] far less than the lifetime costs for HIV care to either an individual or a health system. Cost per new HIV diagnosis, or QALY gained will differ substantially across settings. This creates an imperative for EDs to monitor their own cost effectiveness outcomes, in turn acknowledging that diversity in this respect should be expected.

Acceptance of HIV screening from the patient perspective differs greatly by demographic characteristics[3,16] and has been shown to vary significantly by insurance status, even if there is no direct burden of payment for screening.[3] To address screening acceptability, previous studies have identified ways to evaluate cultural competency among staff and the health literacy needs of the patient population.[19,20] Further innovation in cultural competency and health literacy should be encouraged, building evidence for specific strategies, for example, patient/staff tutorials, brochures, and visual media.

Once HIV infection is confirmed, linkage to care often presents another challenge. The ED environment presents multiple obstacles in delivering new diagnoses or reengaging patients with lapsed HIV care:

patient–physician relationships are newly established and unlikely to be continued; operational hours for laboratory-based HIV testing is typically limited during weekends, evenings, and holidays; staff may be overburdened by unpredictable emergency care; and ED patients may no longer be on site if the HIV assay used has a prolonged turnaround time. Patients who do not receive their HIV diagnosis on site may be particularly difficult to reach by other means. Similarly, engagement in posttest counseling and linkage to care may be challenging such patients.

Often overlooked, opportunities to reengage patients with existing HIV diagnoses in care may present one of the strongest outcomes for comprehensive screening programs, given the high prevalence of HIV-positive patients out of care in certain settings, such as Miami.[5] Fortunately, there are a multitude of linkage strategies in the literature that can guide implementation.[7,14] For the majority of ED patients, HIV test results will be negative, yet this need not terminate the usefulness of a comprehensive screening program: for those at high risk of HIV acquisition, such programs can serve as valuable conduits for HIV prevention, such as preexposure prophylaxis[26] or other evidence-based HIV prevention and harm reduction services. With an established infrastructure, effective screening programs can deliver at all 3 phases of HIV care: diagnosis, treatment, and prevention.

4 | CONCLUSION

ED-based HIV screening represents a crucial component of overall testing strategies in the United States, reaching patients who may otherwise go untested elsewhere. The idea that ED HIV screening programs are meant to supplement other traditional testing programs is important, because they are not meant to substitute community-based or risk- and symptom-based HIV testing in other settings. Nevertheless, a well-implemented program has the potential to efficiently guide HIV-infected patients through the diagnostic and linkage phases and provide segues to preventive care for those at high risk of HIV acquisition. Evidence of continuous quality improvement in the implementation of such programs, however, appears to be lacking on a national level. Although the local context will always be paramount, some barriers are pervasive and shared throughout (eg, low screening delivery for the eligible population, ineffective staff mobilization, lack of cultural competency), leaving opportunities to collectively design effective solutions. To achieve the best outcomes, a greater effort should be paid to evaluating and reporting outcomes as well as implementation strategies, so all ED-based HIV screening programs may benefit from observing the outcomes of strategies identified or validated elsewhere. Critically, many United States EDs already care for highly diverse patient populations that may benefit from routine HIV screening. Further steps to enhance these programs may yield yet more success for EDs in diagnosing HIV infection and linking patients to care.

CONFLICT OF INTEREST

The authors declare they have no conflicts of interest.

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