11-7-2017

# Reaching high-risk patient populations through emergency department opt-out HIV testing: A retrospective chart review

Tyler G. Boyce, BA
*Thomas Jefferson University*, tgb003@jefferson.edu

Priya Mammen, MD, MPH
*Thomas Jefferson University Hospital*, Priya.Mammen@jefferson.edu

# Reaching high-risk patient populations through emergency department opt-out HIV testing: A retrospective chart review

Tyler G. Boyce, BA and Priya E. Mammen, MD, MPH
Sidney Kimmel Medical College at Thomas Jefferson University

## Background

Urban emergency departments (EDs) serve high-risk populations that face challenges in regards to chronic diseases like Human Immunodeficiency Virus infection (HIV), including the following:

- Limited access to care, and reliance on ED services for primary care.[1, 2]
- High prevalence of HIV seropositivity (3.5% to 11.8%) and unawareness of HIV infection (4.0% of those HIV positive).[1, 3]
- Frequent engagement in HIV risk behaviors (37.6% to 89.0%).[3, 4]

Additionally, the current opioid crisis raises questions regarding the role of intravenous drug use as a risk factor for HIV infection.[5]

Emergency department screening programs have the potential to provide substantial medical and financial benefits in relation to these high risk individuals.[6]

## Specific Aims and Hypotheses

This study aimed to identify socioeconomic (SE), sexual, and other risk factors (RFs), among patients diagnosed with HIV infection through an emergency department-based opt-out HIV screening program, and to examine trends in intravenous drug use (IVDU) as a RF.

H1: Unsafe sexual practices are the most commonly reported RF.

H2: Role of IVDU as a RF has increased over the time period studied.

## Methods

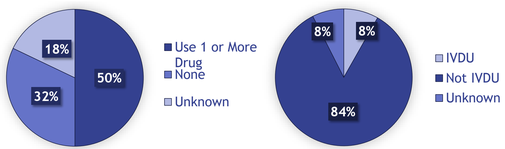
- Retrospective chart review
- Setting: Urban academic level 1 trauma center and affiliated urban community ED
- Sample: All patients newly diagnosed with HIV infection through the ED opt-out HIV screening program from October 2009 to June 2017
- Data were collected from electronic medical records (EMR) and forms completed by screening program personnel for mandatory reporting to the Philadelphia Department of Pubic Health
- Exclusions: Patient records indicated a prior diagnosis of HIV infection; Confirmatory testing not performed or results negative for HIV infection
- Analysis was performed using chi-square and logistic regression

## Results (n=134)

Demographics:

-Average age: 34.5 years
-**82%** Male
-**67%** African American, 19% White, 7% Hispanic, 4% Asian

Illicit Drug Use:

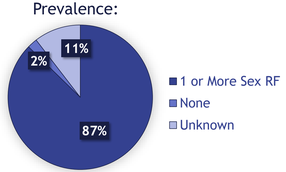



Intravenous Drug Use:

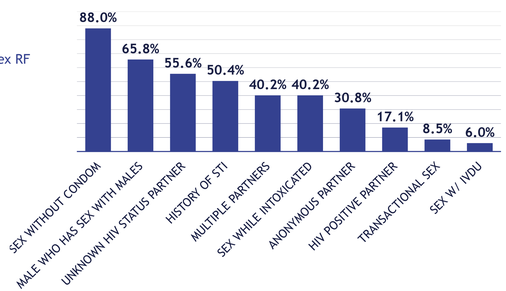



Sexual Risk Factors:

Prevalence:



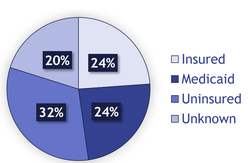

Most Common Sexual RFs Among Those With 1 or More:



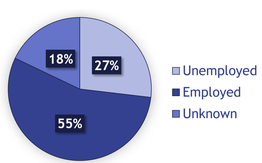

Chief complaint of seeking HIV/STI testing: **9.0%**

Socioeconomic Risk Factors:

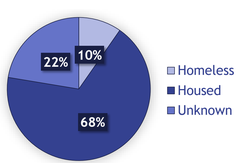
Insurance Status:




Employment:

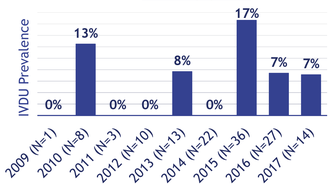



Homelessness:



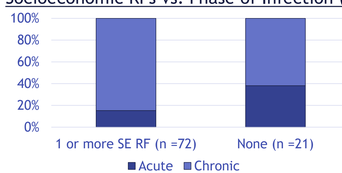

## Analysis

IVDU by year:




No statistically significant trend was found for changes in IVDU by year, likely due in part to the low number of IVDU (p = 0.57).

Socioeconomic RFs vs. Phase of Infection (n=93):




Having 1 or more SE RFs (77.4% of patient sample) was associated with diagnosis in chronic phase (OR, 3.41; 95% CI, 1.15 to 10.15; p = 0.02).

No similar significant association was found for IVDU or sexual RFs.

## Conclusions

- Unsafe sexual practices were the most commonly reported RF.
- Patients in this study rarely presented specifically for HIV testing, the majority reported SE and multiple sexual RFs, and many reported drug use.
- SE risks were associated with diagnosis in the chronic phase of HIV, reflecting a delay in identification and treatment.
- Patients were predominantly male and African American, two groups that have faced challenges in health care utilization.[7, 8]
- No significant trends in IVDU were found, however a larger sample size may provide statistical power to do so.
- This study supports the notion that ED-based public health interventions are an important means for reaching at-risk patients.

## Limitations

- EDs switched EMR software in 2017, limiting access to some older data. However, necessary data was accessible in mandatory reporting forms.
- ED HIV testing prior to 2014 did not include antigen detection, preventing acute phase diagnosis. Chronic vs. acute analysis therefore excluded pre-2014 patients.
- One ED's proximity to a district historically associated with a large homosexual population may account for the high prevalence of males who have sex with males.

Jefferson
Philadelphia University + Thomas Jefferson University
HOME OF SIDNEY KIMMEL MEDICAL COLLEGE

## References


1. Silva A, Glick NR, Lyss SB, et al. Implementing an HIV and Sexually Transmitted Disease Screening Program in an Emergency Department. *Ann of Emerg Med*. 2007; **49** (5):564-572. http://dx.doi.org/10.1016/j.annemergmed.2006.09.028.

2. Marco CA, Weiner M, Ream SL, et al. Access to care among emergency department patients. *Emerg Med J*. 2012; **29** (1):28-31. http://dx.doi.org/10.1136/emj.2010.103077.

3. Alpert PL, et al. Factors associated with unrecognized HIV-1 infection in an inner-city emergency department. *Ann Emerg Med*. 1996; **28** (2):159-164. 10.1016/S0196-0644(96)70056-2.

4. Merchant RC, et al. The relationship of reported HIV risk and history of HIV testing among emergency department patients. *Postgrad Med*. 2010; **122** (1):61-74. 10.3810/pgm.2010.01.2100.

5. Conrad C, Bradley HM, Broz D, et al. Community Outbreak of HIV Infection Linked to Injection Drug Use of Oxymorphone — Indiana, 2015. *Morbidity and Mortality Weekly Report*. 2015; **64** (16):443-444.

6. Paltiel AD, Weinstein MC, Kimmel AD, et al. Expanded Screening for HIV in the United States —An Analysis of Cost-Effectiveness. *New England Journal of Medicine*. 2005; **352**:586-595. 10.1056/NEJMsa042088.

7. Merzel C. Gender differences in health care access indicators in an urban, low-income community. *American Journal of Public Health*. 2000; **90** (6):909-916.

8. Boulware, LE, Cooper LA, Ratner LE, et al. Race and trust in the health care system. *Public health reports* 2016; **118** (4):358-65. https://doi.org/10.1093/phr/118.4.358.