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

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## 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.<sup>1, 2</sup>
- High prevalence of HIV seropositivity (3.5% to 11.8%) and unawareness of HIV infection (4.0% of those HIV positive).<sup>1, 3</sup>
- Frequent engagement in HIV risk behaviors (37.6% to 89.0%).<sup>3, 4</sup>

Additionally, the current opioid crisis raises questions regarding the role of intravenous drug use as a risk factor for HIV infection.<sup>5</sup>

Emergency department screening programs have the potential to provide substantial medical and financial benefits in relation to these high risk individuals.<sup>6</sup>

## 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

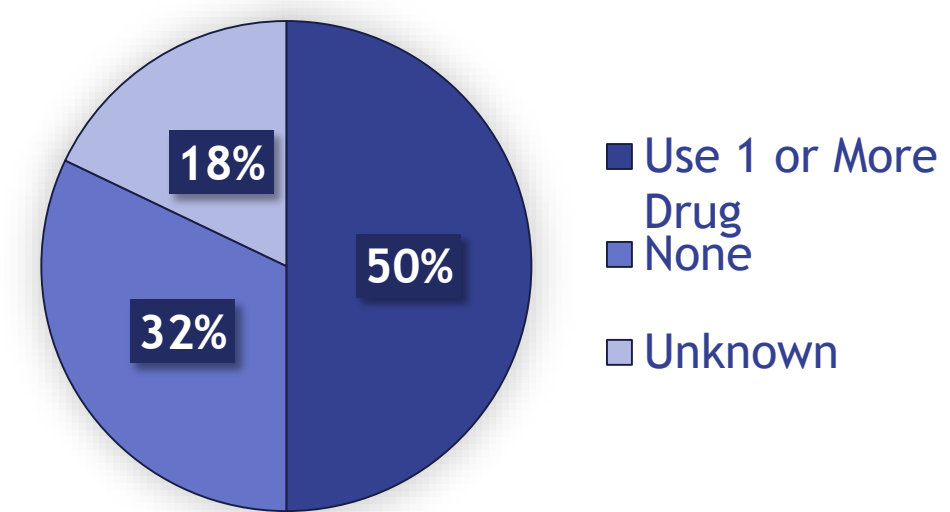
- Retrospective chart review
- Setting: Urban academic level 1 trauma center and affiliated urban community ED
- Sample: All patients newly diagnosed with HIV infection through the ED opt-out HIV screening program from October 2009 to June 2017
- Data were collected from electronic medical records (EMR) and forms completed by screening program personnel for mandatory reporting to the Philadelphia Department of Public 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)

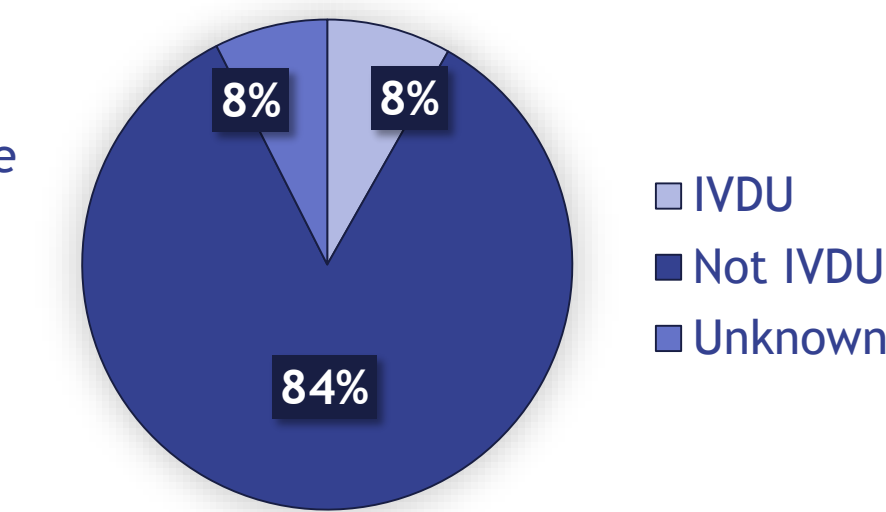
### Demographics:

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

### Illicit Drug Use:

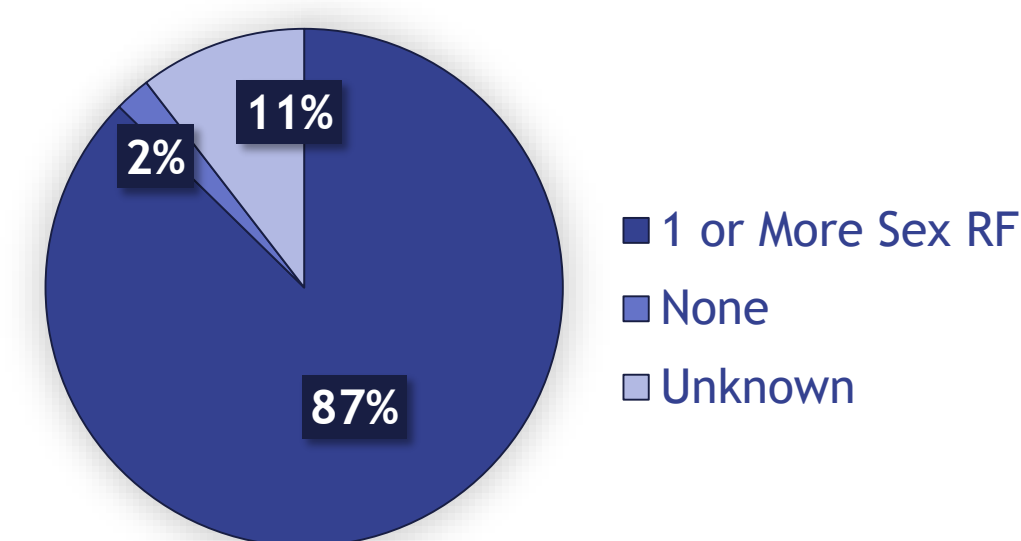


### Intravenous Drug Use:



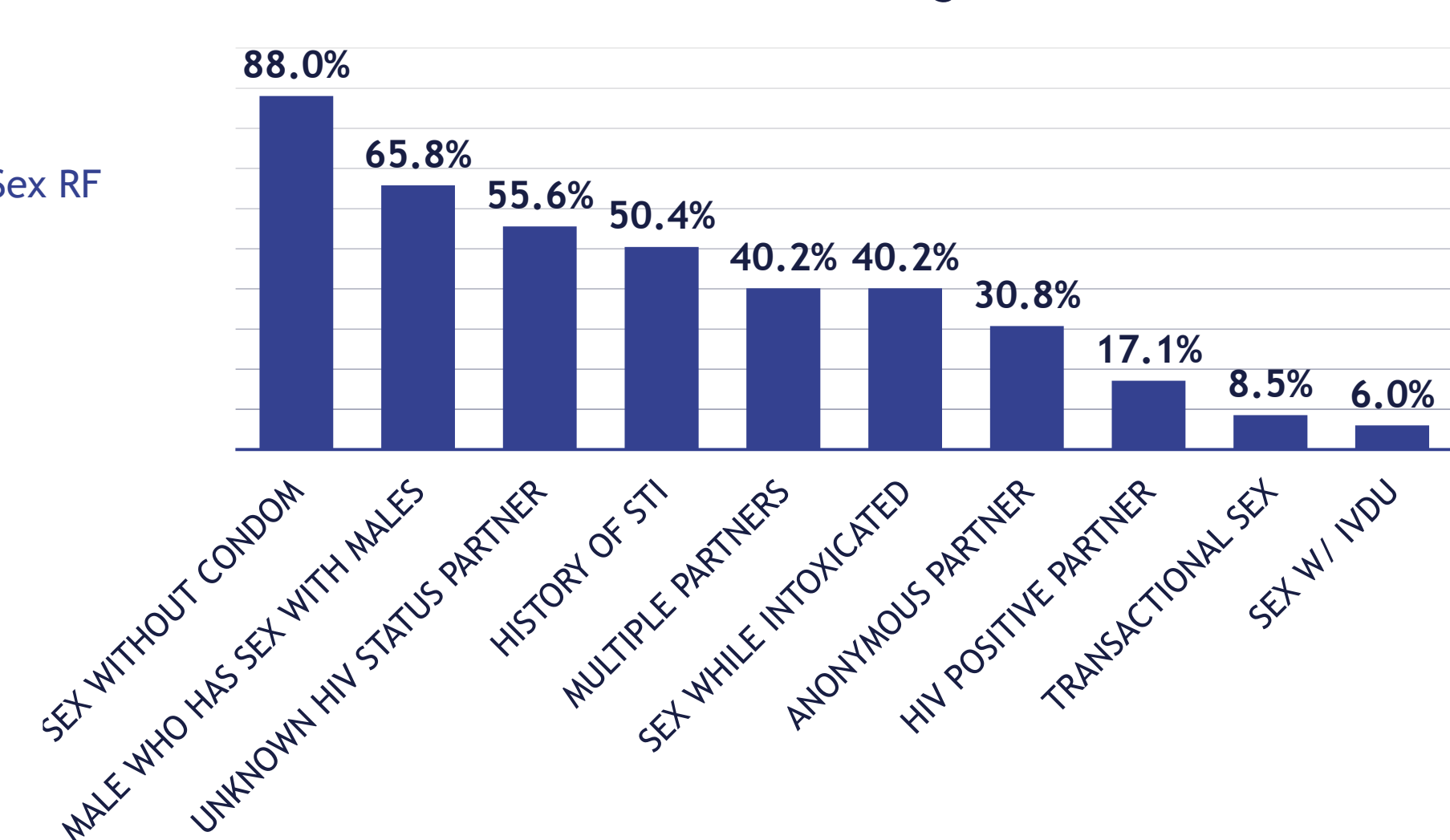
### Sexual Risk Factors:

#### Prevalence:



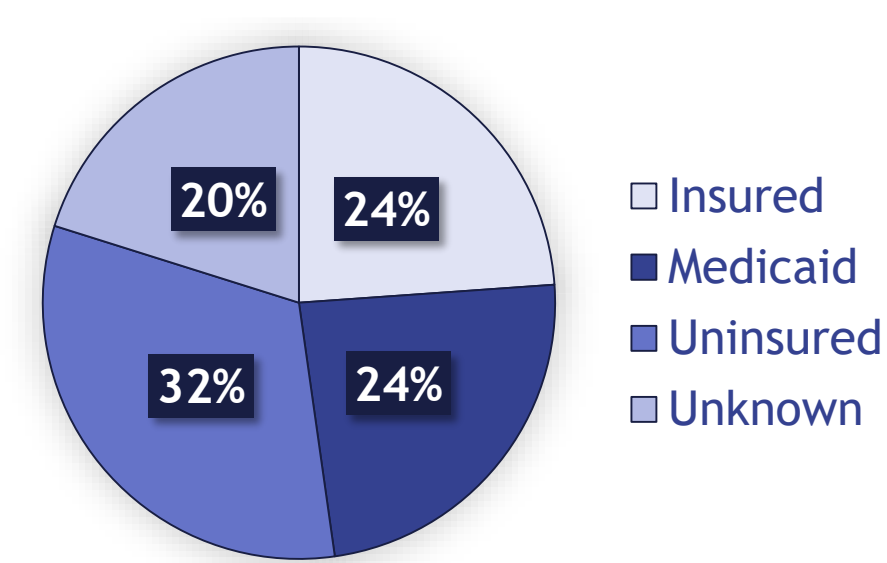
Chief complaint of seeking HIV/STI testing: 9.0%

#### Most Common Sexual RFs Among Those With 1 or More:

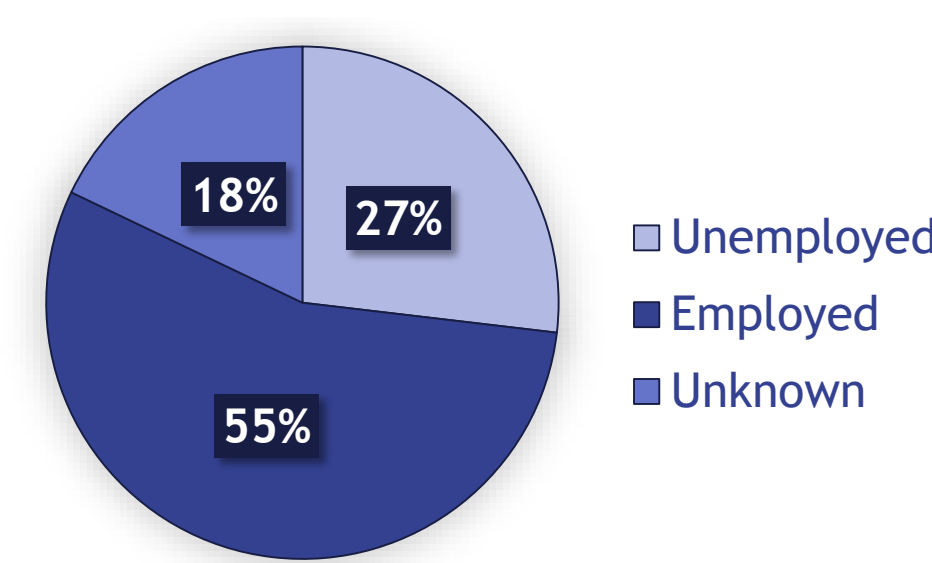


### Socioeconomic Risk Factors:

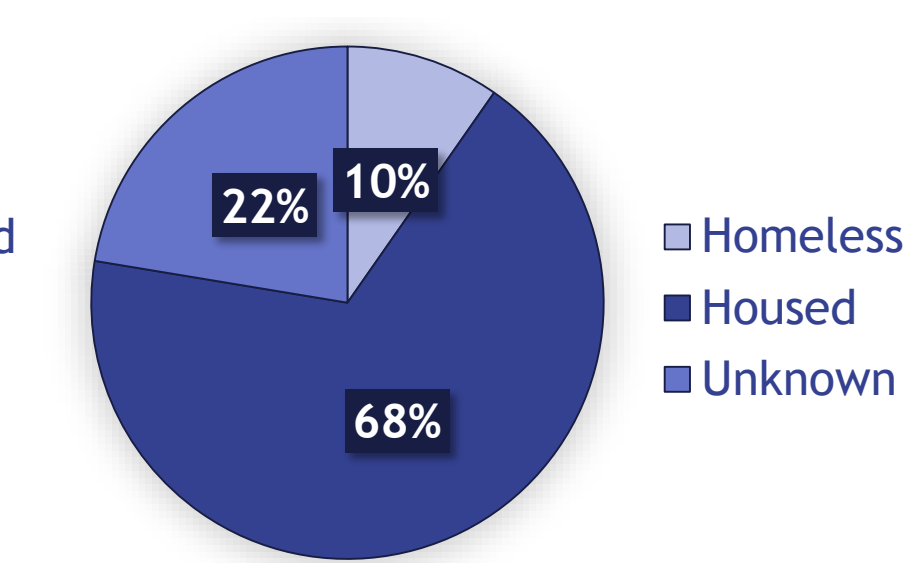
#### Insurance Status:



#### Employment:

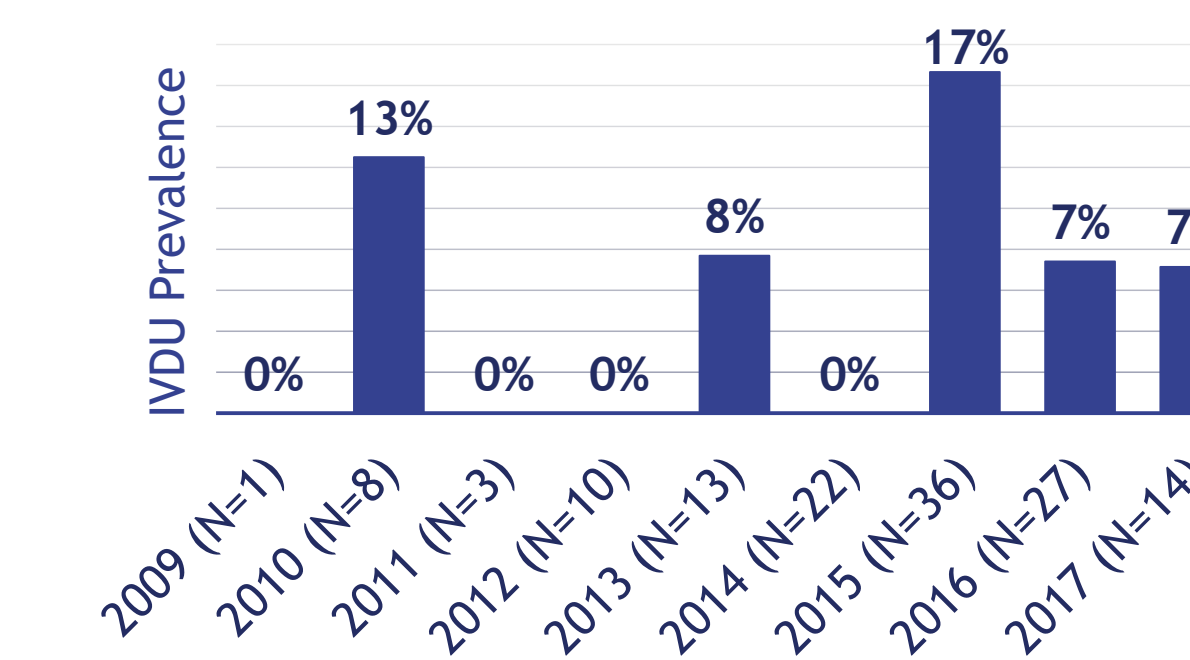


#### Homelessness:



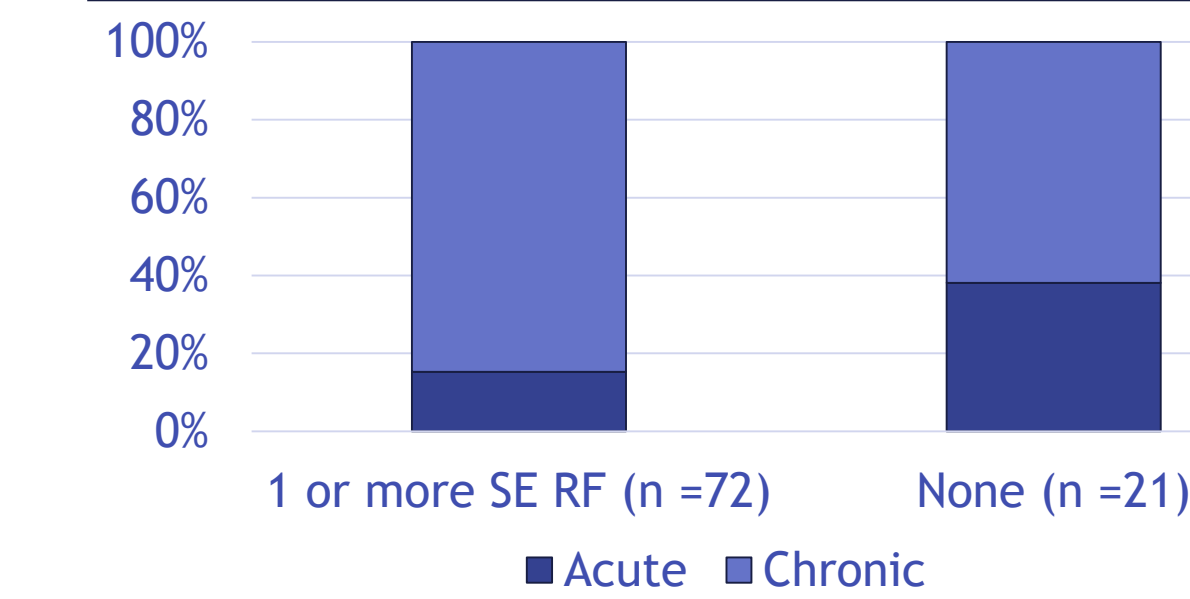
## Analysis

### 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.<sup>7, 8</sup>
- 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.

## References

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