



INTRODUCTION

- An estimated 1.1 million people are infected with human immunodeficiency virus (HIV) in the United States, and 14% or approximately 170,000 are unaware they are infected.
- HIV diagnosis is the first step to care and expanded testing is essential to reduce transmission.
- Individuals with undiagnosed HIV have a transmission rate 3.5 times higher than those aware of their infection.
- Individuals seeking testing and treatment for sexually transmitted infections (STIs) represent a higher risk population for HIV infection.
- Despite revised Centers for Disease Control and Prevention (CDC) recommendations to expand HIV testing in healthcare settings, testing remains low.
- A significant obstacle to expanded testing, especially in emergency departments (EDs), is concern about ensuring appropriate HIV test tracking and follow-up.

OBJECTIVE

- To test the hypothesis that there remains a significant opportunity to improve HIV screening of patients who present to the ED and are diagnosed with or suspected to have an STI (Figure 1).
- Develop a strategy to reduce the HIV screening gap in the ED by triggering screening links when testing for STIs is performed in the ED. For any patients newly diagnosed with HIV, directly link them to care, resulting in earlier treatment and reduced HIV transmission in the community.

METHODOLOGY

- We performed a retrospective electronic medical record (EMR) chart review of patients who were tested for an STI between January 1, 2015 and July 8, 2019 at any of the eight hospital-associated Beaumont Health EDs in Southeast Michigan.
- Patients aged 10 and above who were tested for gonorrhea, chlamydia and syphilis were included, and de-identified data was collected from the EMR.
- Patients were evaluated to determine if previously diagnosed with HIV infection or if concurrent HIV testing was performed during the encounter.
- Records for HIV testing in the EMR were available as far back as 2007.

RESULTS

Table 1. Descriptive statistics of study participants

Characteristic	Value (N = 32,640)
Age of Patient - Years	
Mean (Standard Deviation)	29.3 (10.4)
Median (Interquartile Range)	27.0 (22.0, 34.0)
Minimum Value, Maximum Value	10.0, 100.0
Biological Sex	
Female	25,729 (78.8%)
Male	6,911 (21.2%)
Ethnicity	
Not Hispanic/Latino	29,587 (90.7%)
Hispanic/Latino	700 (2.1%)
Arabic or Middle Eastern Descent	984 (3.0%)
Other	329 (1.0%)
Unknown	1,040 (3.2%)
Race	
White or Caucasian	10,963 (33.6%)
Black or African American	19,901 (61.0%)
Asian	320 (1.0%)
Other	1,163 (3.6%)
Unknown	293 (0.9%)
Chlamydia Testing Performed	
Yes	31,477 (96.4%)
No	1,163 (3.6%)
Gonorrhea Testing Performed	
Yes	31,357 (96.1%)
No	1,283 (3.9%)
Syphilis Testing Performed	
Yes	1,474 (4.5%)
No	31,166 (95.5%)
HIV Antibody/Antigen Screening Performed	
Yes	68 (0.2%)
No	32,572 (99.8%)
Result of HIV Antibody Test (n = 68)	
Reactive	1 (1.5%)
Non-Reactive	67 (98.5%)

Figure 1. Schematic of Study Objective

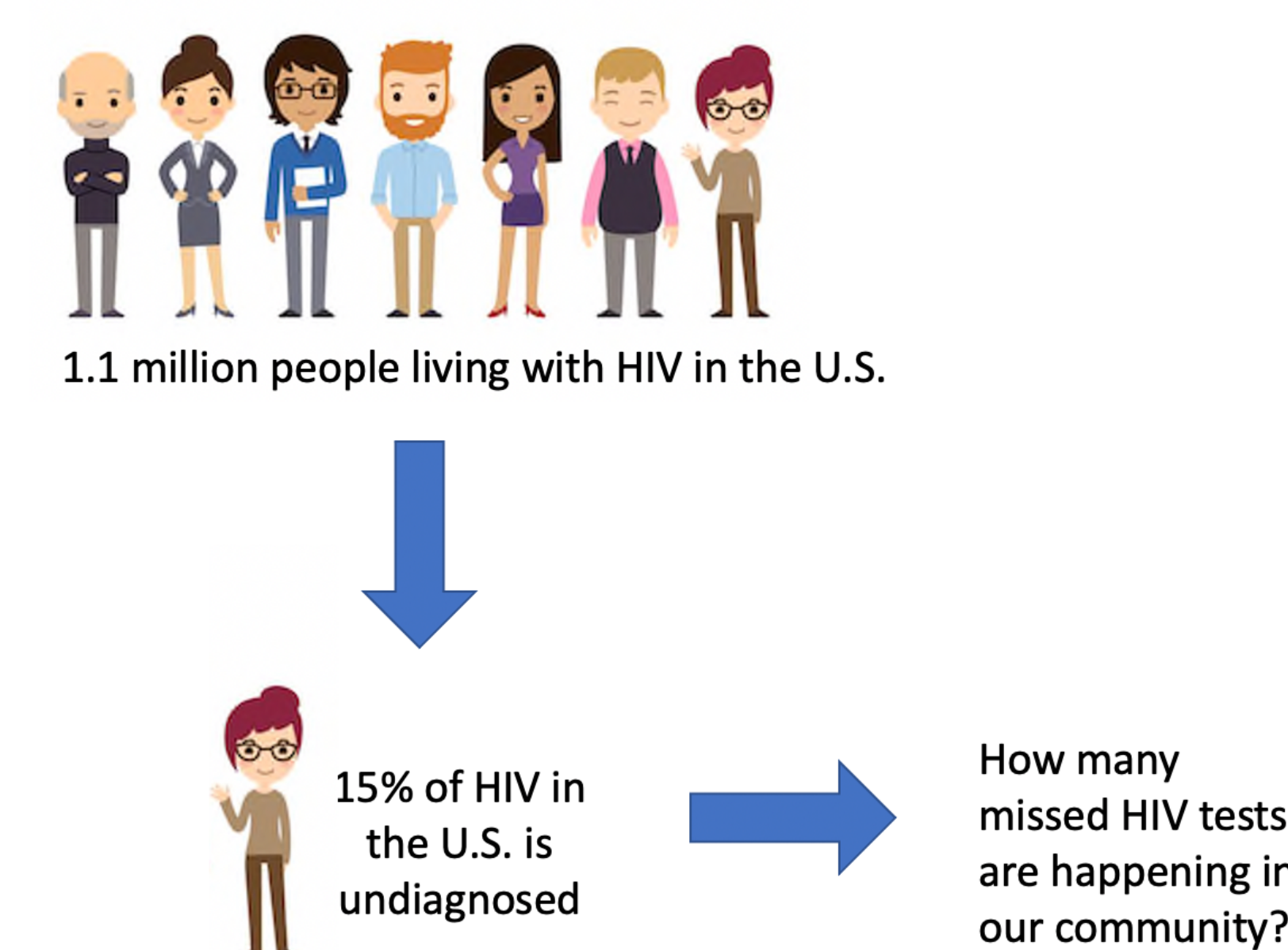
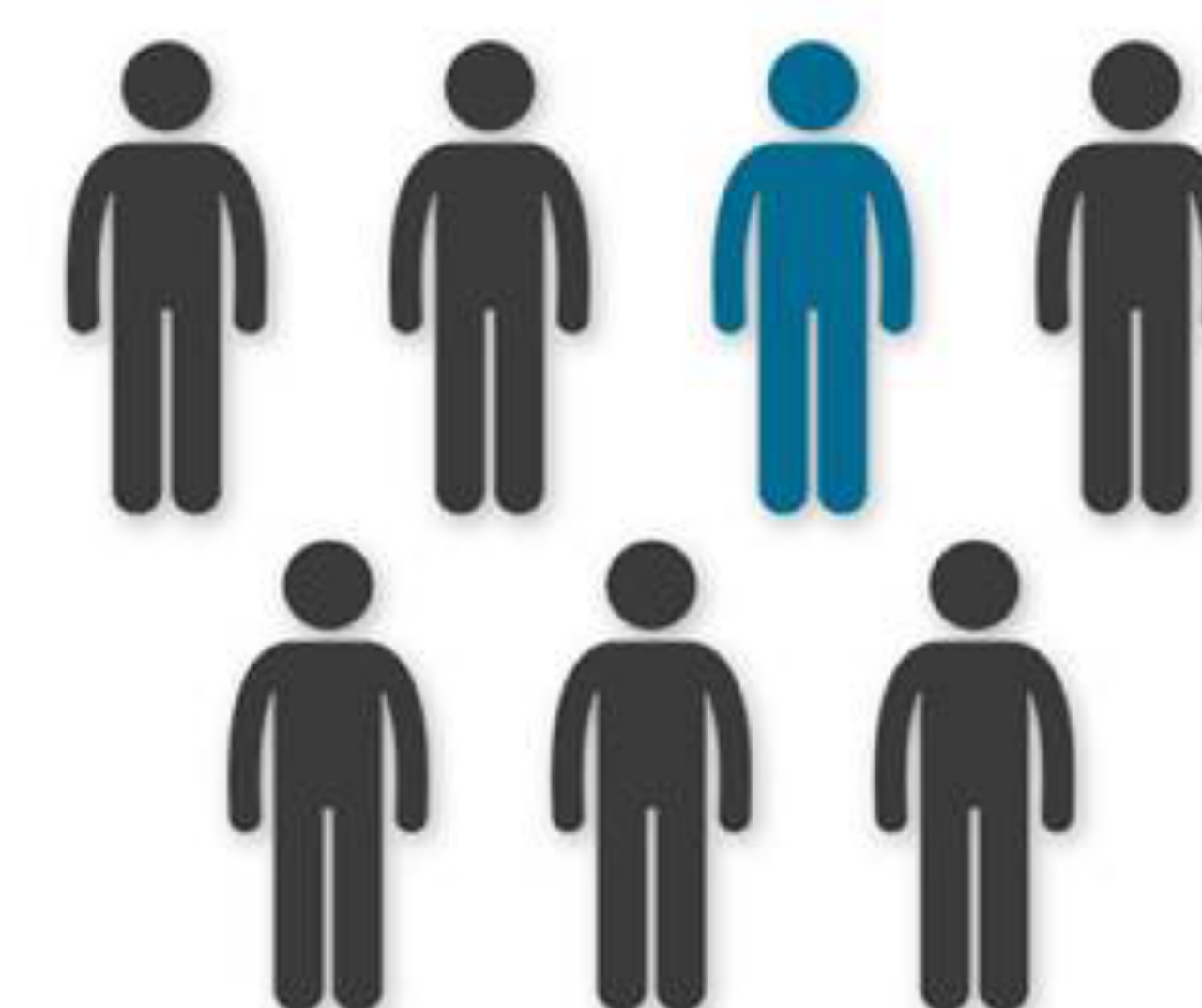


Table 2. Total Number of HIV Tests Completed Before or After ED Encounter

Timing of HIV Test	Number of Tests (%)
HIV Test at Any Time	
Yes	13,119 (41.1%)
No	18,834 (58.9%)
Any HIV Test Before ED Encounter	
Yes	8,438 (26.4%)
No	23,515 (73.6%)
Any HIV Test After ED Encounter	
Yes	8,043 (25.2%)
No	23,905 (74.8%)

1 in 7 living with HIV



are **unaware** of their infection.

RESULTS

- Over this 4 ½ year period there were 32,640 encounters in the EDs for patients not known to have HIV who were tested for STIs, including 31,477 (96.4%) chlamydia tests, 31,357 (96.1%) gonorrhea tests, and 1,474 (4.5%) syphilis tests.
- Only 68 encounters (0.21%) included HIV antibody/antigen screening, and of these, 67 returned non-reactive and one (1.47%) returned reactive.
- Applying this rate to the total population who were tested for STIs would correspond to 479 individuals newly diagnosed.
- The 68 patients tested for HIV infection may have had additional risk factors or findings prompting testing; however, even applying a fraction of this rate would still result in a significant number of newly diagnosed individuals:
 - One half (0.74%): 239 newly diagnosed
 - One tenth (0.147%): 48 newly diagnosed
- 73.6% of patients tested for an STI did not have a prior HIV documented test; 58.9% of patients had no documentation of testing for HIV before, during, or after the ED encounter. (Table 2), representing missed opportunities for screening.

DISCUSSION & CONCLUSIONS

- In this study, only 0.21% of patients tested for STIs received HIV testing at the time of their ED visit. Of those tested, one (1.47%) had a result indicating infection with HIV.
- The CDC recommends that all patients seeking testing and treatment for STIs be routinely screened for HIV during each new visit. Opt-out HIV screening is recommended for all individuals in all health care settings, including EDs.
- Developing a routine HIV screening program would increase diagnosis and linkage to care for individuals with HIV. Early diagnosis and initiation of antiretroviral therapy has been shown to improve quality of life and decrease transmission.
- Limitations of this study included:
 - Patients may have been known to have HIV infection that was not documented in our EMR.
 - Patients may have been offered HIV testing but declined.
 - Additional risk factors for HIV infection were not available in the dataset but might have been obtained and used by the ED provider for testing decisions.

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