

### Introduction

Emergency departments (ED) often serve as the sole source of primary care, particularly for those at increased risk for contracting HIV. In spite of this, and the CDC's broad reaching recommendations that non targeted opt-out HIV screening be offered as part of all routine healthcare (including ED visits), the overall rate of ED-based HIV testing remains exceedingly low (0.2%).

### Objectives

We evaluated two approaches for implementing routine HIV screening in an inner-city, academic ED. The components we modified included staffing and type of HIV testing technology. The programmatic outcomes we assessed included total number of tests performed, proportion of newly identified HIV positive patients, and percentage of newly diagnosed who were linked to care (LTC).

### Materials and Methods

The Johns Hopkins Hospital ED has an annual census of approximately 65,000 visits, The ED population is approximately 75% African American, 15% prior or current injection drug users (IDUs), with a prior reported HIV sero-prevalence of 11-12% and a rate of new diagnosis of approximately 0.6% -2.2%. We examined specific outcomes for two distinct, successive approaches to implementing HIV screening in an inner-city, academic adult ED, for about one year. Program One used a supplementary staff testing model with point-of-care (POC) oral testing. Program Two utilized a triage-integrated HIV Testing Model with fourth-generation blood and POC testing, and an expedited LTC process. Broad eligibility for testing was defined to include all ED patients aged 18-65 years who were not critically ill (i.e., triage acuity level 3-5).

### Results

#### Program One

July 2012- June 2013

Dedicated supplemental staff performing HIV screening offer and consent; and completing rapid oral POC testing at bedside.

#### Program Two

August 2013 – July 2014

Integration with ED clinical team, with triage nurses performing screening offer and consent; phlebotomy staff completing blood based HIV tests and supplemental staff completing POC oral tests.

Figure 1  
Program Description

### Outcomes and Measurement of Results:

During Program One, 6,832 patients were tested for HIV with a rapid POC oral HIV test. Of all patients tested, 16 (0.23%) were newly diagnosed with HIV, of whom 13 (81%) were successfully linked to care. During Program Two, 8,233 patients were tested for HIV; of those, 3,124 (38%) received a blood test and 5,109 (62%) received a POC test. Of all patients tested in Program Two, there were 29 (0.35%) newly diagnosed cases of HIV, four of which were acute infections, and 27 (93%) of which were successfully linked to HIV specialty care. Comparison of these two programs revealed an increase in total testing volume by more than 1400 tests (21%), an increase in the total number of patients newly diagnosed with HIV by 13 (81%), and an increase (15%) in the percentage of patients who were successfully LTC.

### Limitations/Conclusions

There were several limitations. Our broad eligibility definition does not take into account the multiple exclusions (i.e. patients who had been tested within the past three months, had a previous diagnosis of HIV/AIDS, or were unable to provide informed consent) that we were unable to capture due to EMR limitations. Further, there was variability in the process of approaching patients between programs, which could have impacted our outcomes. Overall, our findings show that integrating HIV screening into the standard triage workflow resulted in a greater number of ED patients who were tested for HIV as compared to the supplementary testing staff only mode. Moreover, new rapid fourth-generation testing technology allows for the identification of acute HIV infection. This is one approach to scale-up testing in the ED.

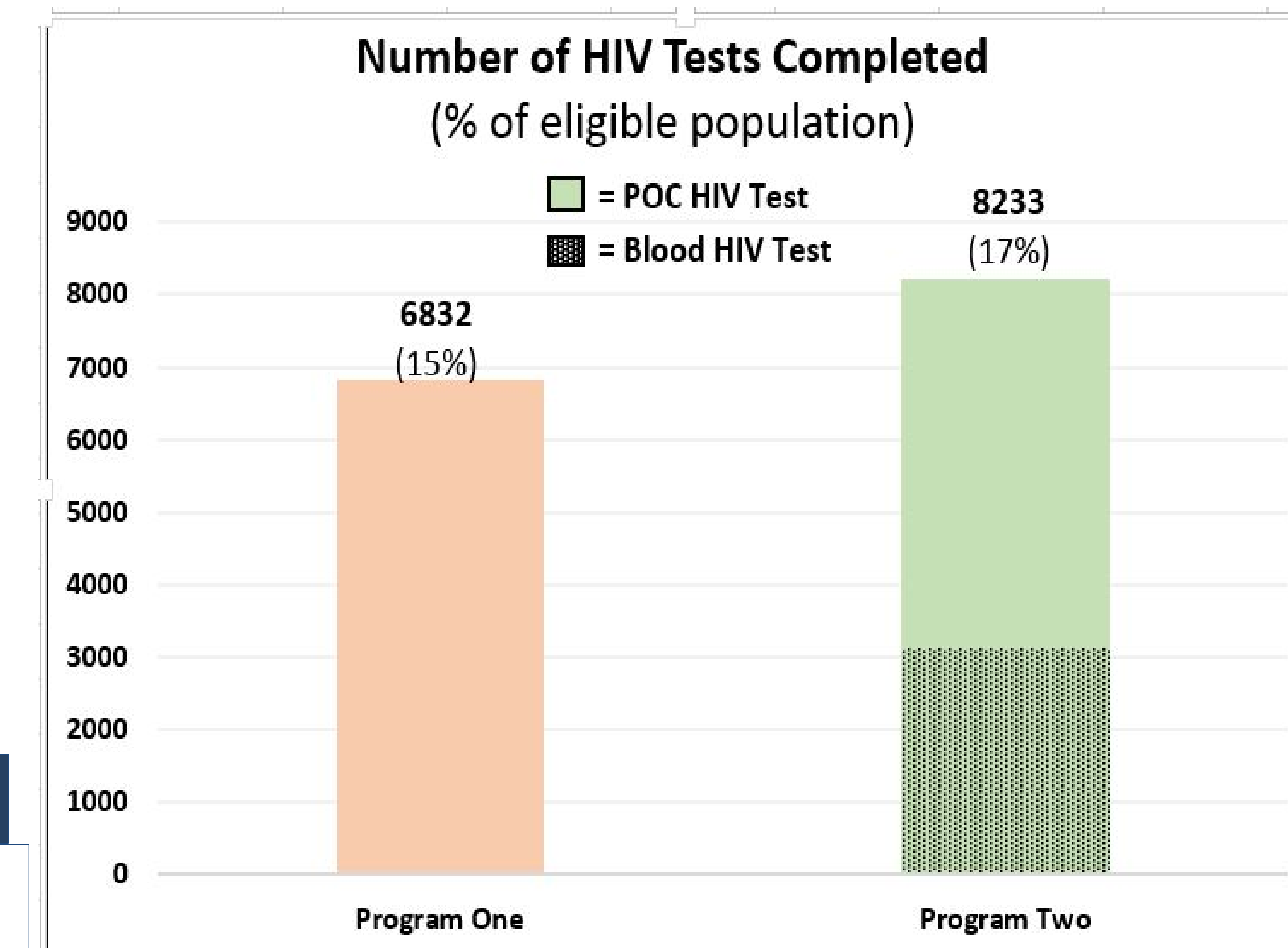


Figure 2 Number of HIV tests completed per program with numbers of HIV oral and blood tests completed in program 2.

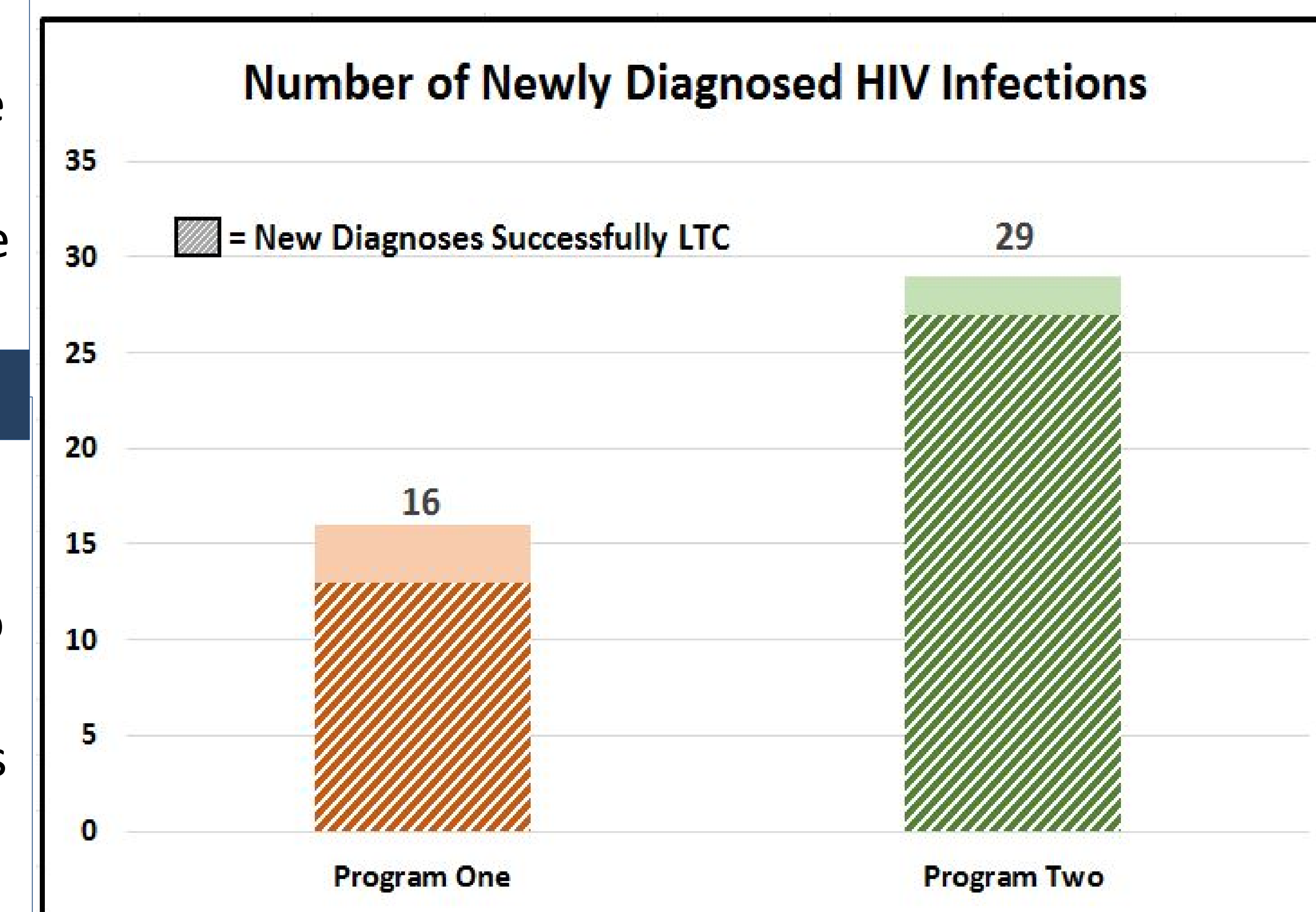


Figure 3 Number of Newly diagnosed HIV Infections per Program with Numbers successfully Linked to Care. .