

# Expanding HIV Testing in Hospital Emergency Departments and Inpatient Admissions: Findings from the HPTN 065 (TLC-Plus) Study

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## BACKGROUND

- Routine opt-out HIV screening is not widely implemented in hospitals in the United States
- Since 2007, efforts to increase HIV testing have emphasized and promoted testing using point-of-care (POC) tests but this approach is labor intensive and difficult to scale up in busy hospital settings and to institute around the clock over 24 hours
- The Expanded HIV Testing (EHT) component of the HPTN 065 (Test, Link-to-Care plus Treat [TLC-Plus]) study assessed the feasibility of achieving universal offer of HIV testing for hospital emergency departments (ED) and inpatient (IP) admissions
- A total of 16 hospitals, 9 in the Bronx, NY and 7 in Washington DC, participated in the study. Most of these hospitals already had POC HIV testing of ED patients supported by local health departments in hospital ED but not among hospital IP admissions
- Participating hospitals were encouraged to build on ongoing HIV testing efforts through activities such as the following: 1) fostering administrative and medical staff support, 2) simplifying informed consent procedures, 3) encouraging the use of electronic processes for documentation procedures, and 4) shifting from POC rapid testing with dedicated testing staff to a routine opt-out HIV testing approach with laboratory-based HIV tests (multiplex analyzers)

## METHODS

- The study supported the hiring of a testing coordinator and data manager at each hospital as well as other testing-related expenses
- Hospitals reported testing data monthly to a centralized database and quarterly progress reports
- Annual study meetings were conducted to share lessons learned across hospitals
- We analyzed testing data from February 1, 2011, to January 31, 2014
- The following outcomes were analyzed:
  - Total number and percentage of annual ED visits and IP admissions during which an HIV test was conducted
  - Annual percentage of positive tests among tests conducted
  - Absolute difference in percentage of HIV tests conducted of annual ED visits and IP admissions from year 1 to year 3 in each hospital
  - Total number of HIV tests, POC tests, and laboratory-based (lab) tests for each study quarter
- We excluded monthly observations from hospitals which could not provide data needed for the calculation of annual percentages of HIV tests and positive HIV tests done during ED visits and IP admissions and
  - Of 324 total study months in Bronx, NY (9 hospitals x 36 months): no months of ED or IP data were excluded (100% of months were used in analyses)
  - Of 252 total study months in Washington DC (7 hospital sites x 36 months): 9 months of ED data were excluded (96.4% of months were used in analyses) and 48 months of IP data were excluded (80.9% of months were used in analyses)

## SUMMARY OF RESULTS

### ED HIV testing:

- During the 3 year study, data was collected from 1,621,016 ED visits in Bronx, NY and 729,172 ED visits in Washington, DC (Table 1)
- Over the 3-year study period, HIV tests were conducted during 106,176 ED visits (6.5%) in the Bronx, NY (hospital range: 2.0% - 12.5%) and during 100,805 ED visits (13.8%) in Washington, DC (hospital range: 4.8% - 39.3%) (Table 1)
- The annual percentage of ED visits with HIV testing showed little change from year 1 to year 3: from 6.6% to 6.9% in Bronx hospitals and increased slightly from 11.9% to 15.8% in DC hospitals (Table 1)
- The absolute change in the percentage of ED patients tested from year 1 to year 3 for individual hospitals ranged widely, from a decrease of 12.7 percentage points to an increase of 16.1 percentage points (Figure 1)
- The percentage of positive HIV tests among all HIV tests did not change over time in the Bronx, NY (0.4%) and in Washington, DC showed little change from year 1 to year 3: from 0.6% to 0.8% (Table 1)
- Laboratory based testing in EDs increased over the course of the study in both municipalities: from 0.3% in the first study quarter to 28.1% in the last study quarter in the Bronx, NY and from 0.1% to 37.2% in Washington, DC (Figures 3 and 5)

## RESULTS

Table 1. Number of tests and positive tests by year during ED visits and IP admissions in Washington, DC and Bronx, NY hospitals

	Bronx, NY				Washington, DC			
	Total	Feb 2011 - Jan 2012	Feb 2012 - Jan 2013	Feb 2013 - Jan 2014	Total	Feb 2011 - Jan 2012	Feb 2012 - Jan 2013	Feb 2013 - Jan 2014
ED Visits n	1,621,016	525,137	555,113	540,766	729,172	233,767	264,337	231,068
HIV Tests n (%)	106,176 (6.5%)	34,620 (6.6%)	34,186 (6.2%)	37,390 (6.9%)	100,805 (13.8%)	27,860 (11.9%)	36,449 (13.8%)	36,496 (15.8%)
HIV Positive Tests n (%)	408 (0.4%)	153 (0.4%)	122 (0.4%)	133 (0.4%)	618 (0.6%)	172 (0.6%)	161 (0.4%)	285 (0.8%)
Inpatient Admissions n	361,745	122,021	120,900	118,824	150,655	42,758	54,668	53,229
HIV Tests n (%)	47,086 (13.0%)	15,811 (13.0%)	15,112 (12.5%)	16,163 (13.6%)	33,129 (22.0%)	8,133 (19.0%)	12,294 (22.5%)	12,702 (23.9%)
HIV Positive Tests n (%)	847 (1.8%)	230 (1.5%)	251 (1.7%)	366 (2.3%)	1,620 (4.9%)	519 (6.4%)	561 (4.6%)	540 (4.3%)

Figure 1. Absolute difference in percentage of HIV tests conducted during ED visits from year 1 to year 3, by hospital site (95% Confidence Intervals)

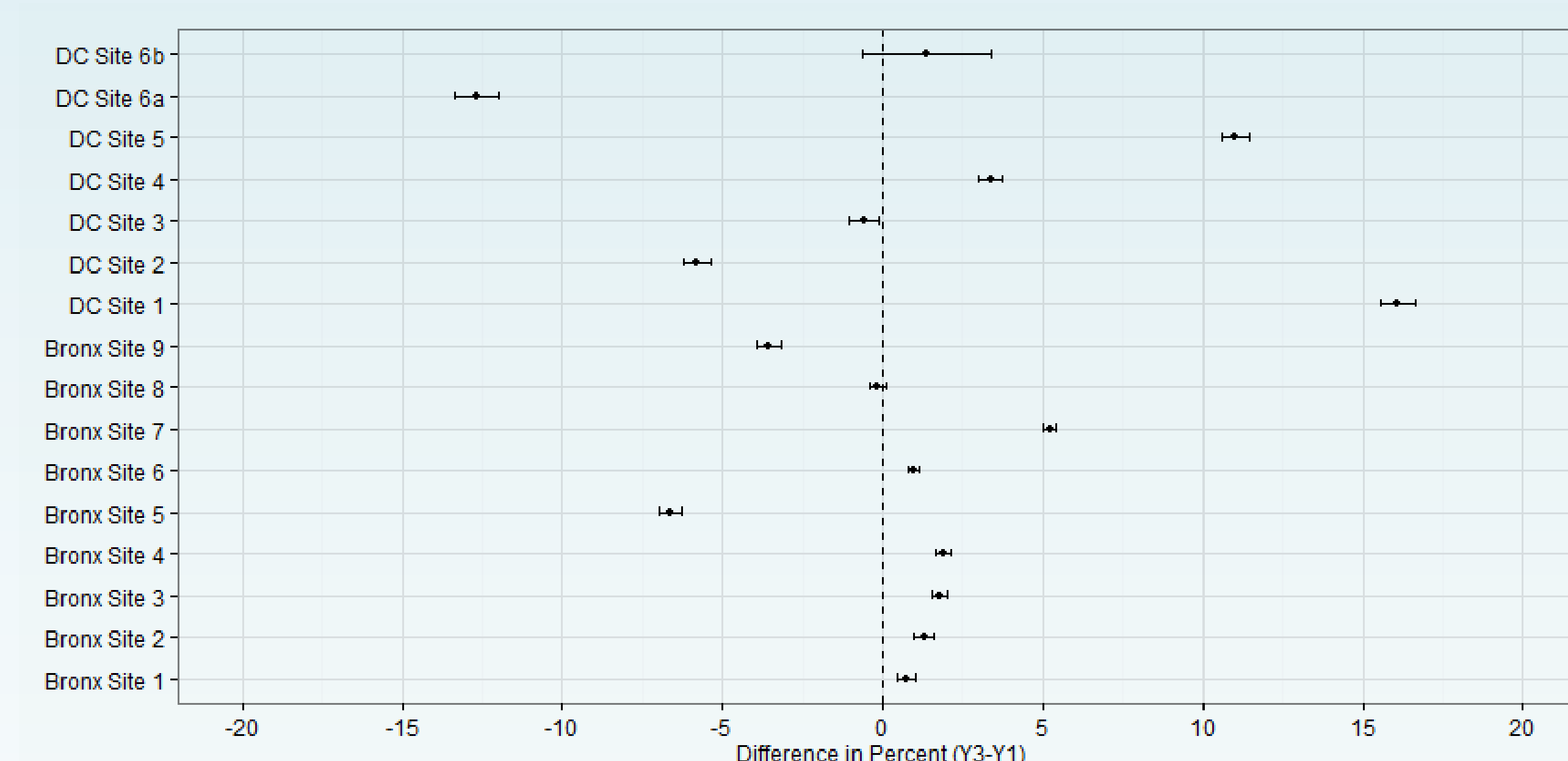


Figure 2. Absolute difference in percentage of HIV tests conducted during IP admissions from year 1 to year 3, by hospital site (95% Confidence Intervals)

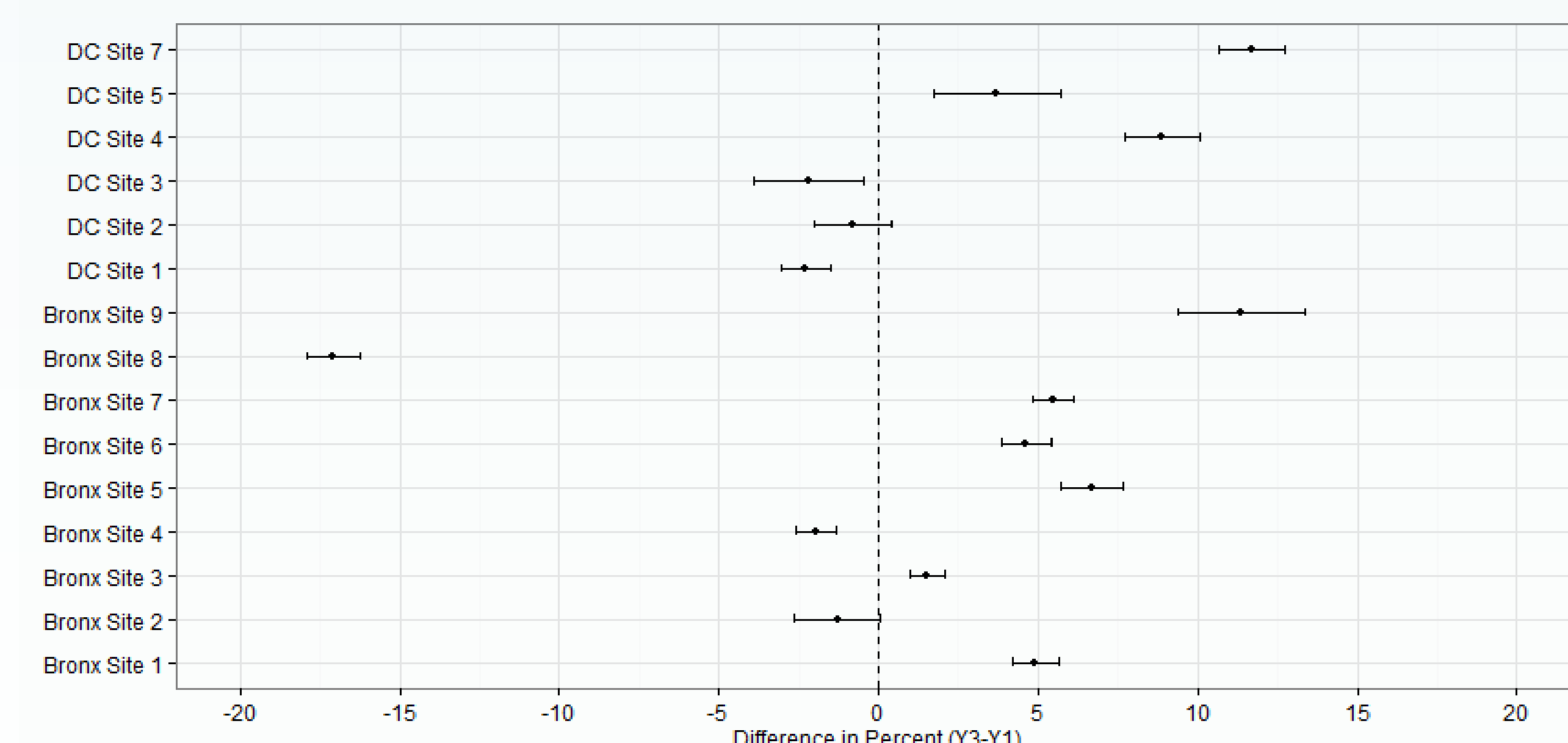


Figure 3. Number of HIV tests and the numbers and percentages of lab and POC tests conducted during ED visits by study quarter in Bronx, NY hospitals

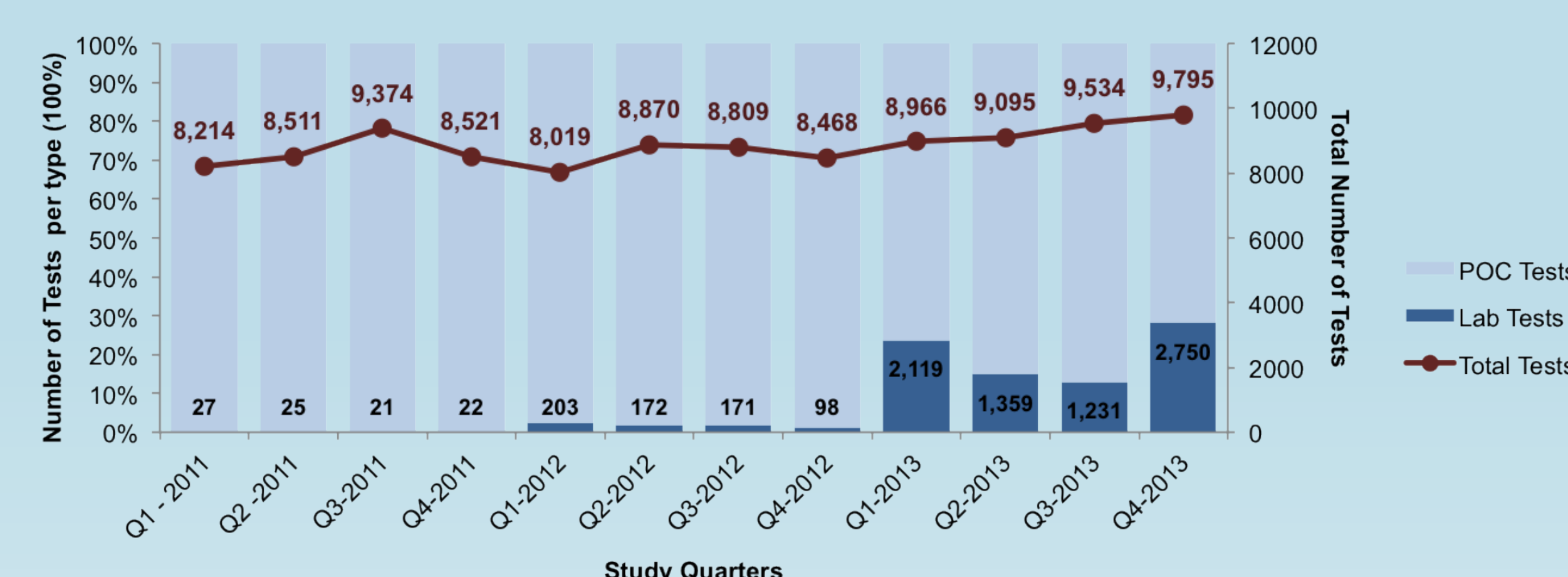


Figure 4. Number of HIV tests and the numbers and percentages of lab and POC tests conducted during IP admissions by study quarter in Bronx, NY hospitals

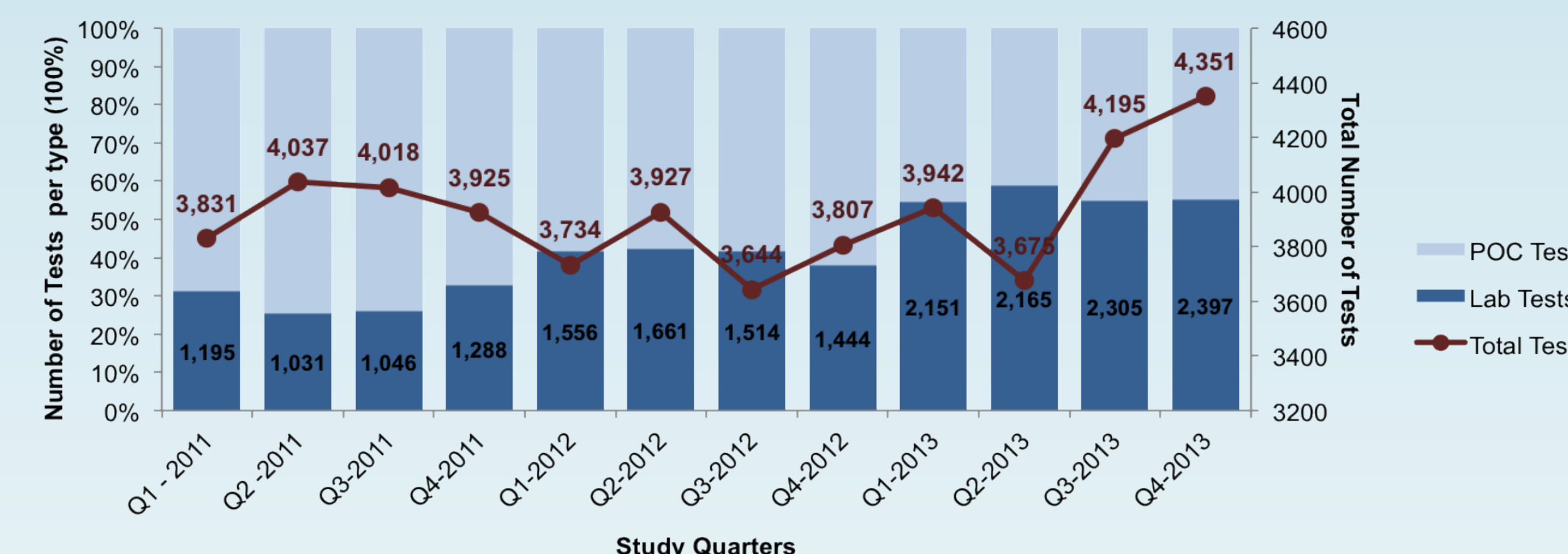


Figure 5. Number of HIV tests and the numbers and percentages of lab and POC tests conducted during ED visits by study quarter in Washington, DC hospitals

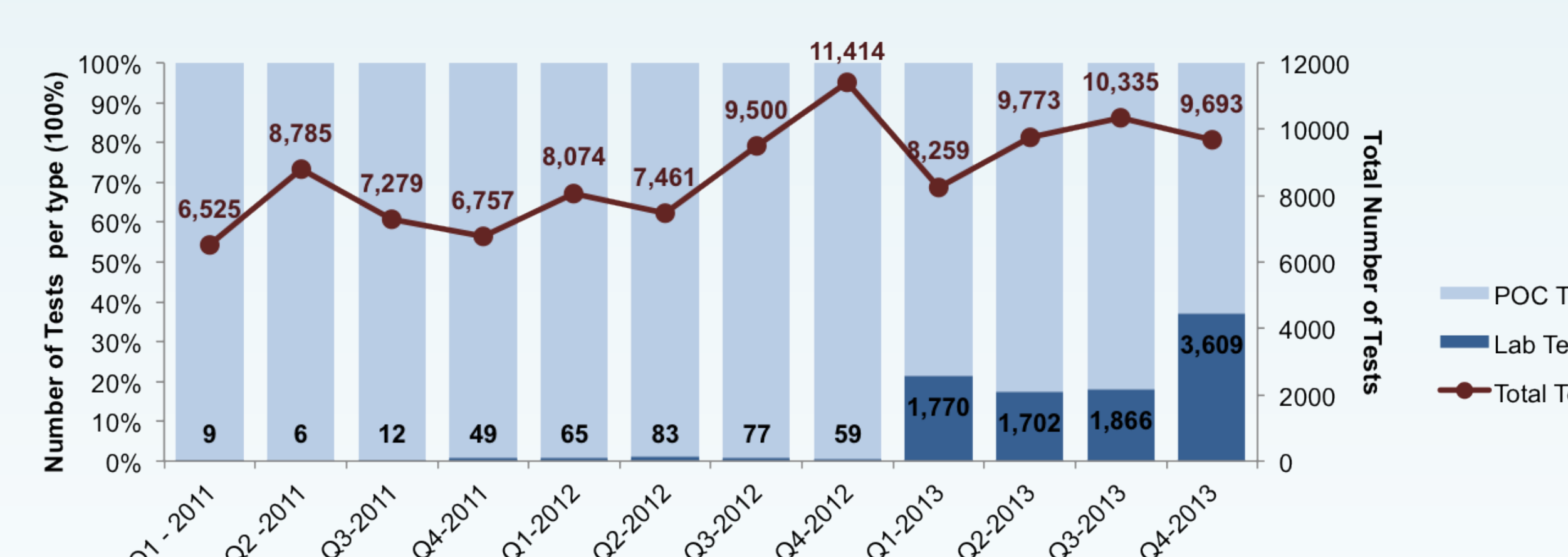
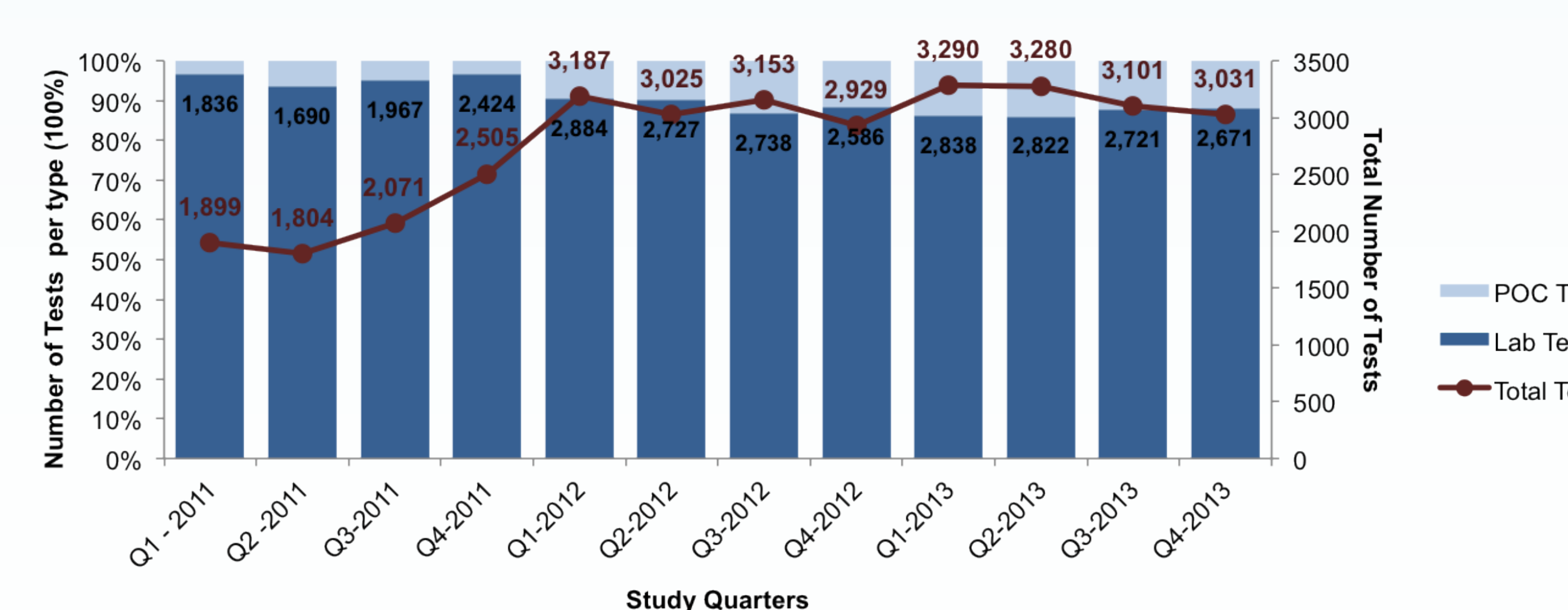


Figure 6. Number of HIV tests and the numbers and percentages of lab and POC tests conducted during IP admissions by study quarter in Washington, DC hospitals



## SUMMARY OF RESULTS (CONTINUED)

### IP HIV testing:

- During the 3 year study, data was collected from 361,745 IP admissions in Bronx, NY and 150,655 IP admissions in Washington, DC (Table 1)
- Over the 3-year study period, HIV tests were conducted during 47,086 IP admissions (13%) in the Bronx, NY (hospital range: from 5.1% to 26.8%) and during 33,129 IP admissions (22%) in Washington, DC (hospital range: from 9.6% to 49.1%) (Table 1)
- The annual percentage of IP admissions with testing showed little change from year 1 to year 3: from 13% to 13.6% in NY and increased slightly from 19.0% to 23.9% in DC (Table 1)
- For individual hospitals, the absolute change from year 1 to year 3 in the percentage of IP admissions tested ranged from a decrease of 17.1 percentage points to an increase of 11.7 percentage points (Figure 2)
- The percentage of positive HIV tests of all HIV tests done increased slightly from year 1 to year 3 in the Bronx, NY (from 1.5% to 2.3%) and decreased from 6.4% to 4.3% in Washington, DC
- Laboratory based testing among IP admissions increased from 31.2% in the first study quarter to 55.1% in the last study quarter in the Bronx, NY. In DC, the majority of testing was laboratory-based throughout the study, but decreased from 96.7% in the first quarter to 88.1% in the last quarter (Figures 4 and 6)

## LIMITATIONS

- Data were not reported consistently by all hospitals resulting in missing data
- Hospitals did not collect information on the number of HIV tests offered
- Before and during the study period, testing practices were influenced by health department support (including provision of POC rapid tests)

## CONCLUSIONS

- This study collected data from a large number of ED visits and IP admissions and found that HIV testing varied widely at different hospitals in the Bronx and DC, but the annual percentage of patients tested showed little change over the three year study period
- Even with concerted efforts, hospitals tested less than one quarter of their patients during ED visits and IP admissions
- In both municipalities, the percentage of HIV positive tests exceeded the 0.1% threshold for routine screening, as recommended by the CDC (site-specific results not shown)
- The percentage of positive HIV tests was higher for tests performed during IP admissions than ED visits: 4.9% in Washington, DC IP admissions compared with 0.6% in ED visits, and 1.8% in Bronx IP admissions compared with 0.4% in ED visits

## DISCUSSION

- During the study period, the adoption of lab based testing increased in ED and IP in Bronx, NY and in ED in Washington, DC, providing a foundation for more efficient future scale-up of HIV testing
- Few hospitals tested any inpatients before the study. Thus there was more opportunity for expansion of HIV testing in IP than ED setting
- We are currently assessing possible challenges to the expansion of HIV testing, which likely included, among others, reliance on dedicated testing staff which limited any substantial increase in testing without adding proportionally more staff
- Further efforts are needed to expand HIV testing in these settings in order to identify all individuals who are unaware of their HIV infection

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