

Evidence of HIV Care Following STD Clinic Visits by Out-of-Care HIV-Positive Persons

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Background

- About 80,000 New York City (NYC) residents are infected with HIV. Only 81% of those receiving HIV care achieved viral suppression in 2014 and disparities in HIV outcomes persist. Among black and young New Yorkers, the proportion virally suppressed is particularly low.⁽¹⁾
- In 2012, over 1,200 HIV+ patients, largely low income, uninsured, and black, accessed services at the nine publically funded sexually transmitted disease (STD) clinics. The clinics provide counseling, linkage, and social services to HIV+ patients in need of HIV medical care.
- HIV+ people with a newly diagnosed STD are important to focus on to prevent further spread of HIV, as STD acquisition suggests recent sexual activity and likely unsafe sex practices. Coinfection with other STDs also renders HIV+ patients more infectious by augmenting shedding of the virus.⁽²⁾
- As part of the Focused Action towards Suppression and Stopping Transmission (FASST) study, we describe HIV care outcomes among HIV+ patients who sought services from an NYC STD clinic in 2012.

Methods

- Data sources: Matched STD clinic electronic medical record and longitudinal data on HIV-related laboratory tests (CD4, viral load) reported to the NYC HIV Surveillance Registry.
- Population:
 - Known to have been HIV+ for at least 1 year at the time of last STD clinic visit in 2012 (index visit), either by clinician / lab report to the HIV Surveillance Registry or by STD EMR (including prior testing at STD clinics and self-report).
 - Aged ≥ 15 years.
 - Residents of NYC or NYC Metropolitan Statistical Area (3) at the time of index visit.
- Key exposures:
 - HIV care status prior to index visit; “in HIV care:” ≥ 2 viral load (VL) or CD4 results in the year preceding index visit, at least 3 months apart.
 - Presence and number of diagnosed STDs at index visit.
- Outcomes:
 - Evidence of HIV care after index visit: ≥ 1 viral load (VL) or CD4 result within 3 months after index visit.
 - Viral suppression after index visit: Last VL value within 1 year after index visit ≤ 200 copies/mL. Absence of a viral load was treated as lack of VL suppression.
- Statistical methods:
 - Descriptive statistics (chi-squared test, Mann-Whitney test)
 - Logistic regression to assess correlates of: 1) evidence of HIV care, and 2) viral suppression after the STD clinic visit.

Results

Table 1. Characteristics of HIV+ STD clinic patients at their index visits in 2012, by HIV care status prior to index visit (N=1,045).

	In HIV care prior to visit (N=715)	Out of HIV care prior to visit (N=330)	p-value
Sociodemographic			
Sex at birth			
Male	672 (94.0%)	308 (93.3%)	0.685
Female	43 (6.0%)	22 (6.7%)	
Age			
Median (IQR)	40 (31-48)	34 (28-43)	<0.001
Race/ethnicity			
White	101 (14.1%)	54 (16.4%)	0.182
Non-Hispanic black	362 (50.6%)	182 (55.2%)	
Hispanic	208 (29.1%)	79 (23.9%)	
Other	44 (6.2%)	15 (4.6%)	
Sexual health-related			
Time since first known HIV diagnosis			
1 - 3 years	95 (13.3%)	74 (22.4%)	<0.001
4 - 6 years	144 (20.1%)	89 (27.0%)	
> 6 years	476 (66.6%)	167 (50.6%)	
Transmission risk			
MSM	517 (72.3%)	254 (77.0%)	0.300
IDU	61 (8.5%)	19 (5.8%)	
Heterosexual	49 (6.9%)	18 (5.5%)	
Unknown	88 (12.3%)	39 (11.8%)	
Number of sex partners in past 3 months			
0	11 (1.5%)	2 (0.6%)	0.156
1	234 (32.7%)	111 (33.6%)	
4-Feb	291 (40.7%)	126 (38.2%)	
>5	113 (15.8%)	46 (13.9%)	
Missing	66 (9.2%)	45 (13.6%)	
Number of visits within 1 year prior (including index visit)			
1	553 (77.3%)	254 (77.0%)	0.894
≥ 2	162 (22.7%)	76 (23.0%)	
Index visit characteristics			
HIV test receipt			
Yes	33 (4.6%)	40 (12.1%)	<0.001
No	682 (95.4%)	290 (87.9%)	
STD diagnosis			
No	414 (57.9%)	157 (47.6%)	0.002
Yes	301 (42.1%)	173 (52.4%)	
>1 STD diagnosis (of total)	40 (5.6%)	38 (11.5%)	<0.001

- Previously out-of-care patients (32%) were less likely than those engaged in HIV care prior to the index visit to: (Figure 1)
 - Have subsequent evidence of HIV care within 3 months of the index visit (42% vs 72%, $p < 0.001$).
 - Have subsequent evidence of viral suppression within 12 months of the index visit (76% vs. 39%, $p < 0.001$).
- The proportion virally suppressed was lowest among those with 2 or more STDs diagnosed at the index visit (no STDs vs. ≥ 2 STDs: 63% vs. 46% suppressed, $p = 0.001$; data not shown).

Evidence of subsequent HIV care among patients out of HIV care prior to index visit:

- Those with no evidence of HIV care within 3 months after index visit were less likely to have a VL measurement or achieve viral suppression at 1 year than those with evidence of care within 3 months (21% vs 64%, $p < 0.001$). (Figure 2)
- The youngest patients (≤ 24 years, vs. 25-34), women (vs. men), those with heterosexual HIV transmission risk (vs. MSM), and those who received an HIV test at index visit (vs. no test) were more likely to have evidence of HIV care within 3 months after index visit.
- Those with ≥ 5 sex partners (vs. 0-1) in the 3 months preceding index visit were less likely to have evidence of care within 3 months after index visit. (Data not shown)

Viral suppression among all patients (Table 2):

- Being out of HIV care in the year prior to index visit was independently associated with lack of viral suppression within a year after the index visit. Non-Hispanic black race (vs. white), residence in a high-poverty (>30%) neighborhood (vs. <10%), and HIV test receipt at index visit (vs. no test) were similarly associated with lower adjusted odds of viral suppression.
- Being female (vs. male) or aged ≥ 50 (vs. 25-34) was associated with higher adjusted odds of subsequent viral suppression.
- Residence in Metro NYC (vs. within NYC) and STD diagnosis during index visit (vs. no diagnosis) were also associated with lower odds of subsequent viral suppression, whereas longer time since HIV diagnosis (≥ 4 years vs. 1-3 years) was associated with increased odds. However, these associations did not persist in multivariable analyses controlling for other factors.
- The 237 patients who did not subsequently achieve viral suppression had a median VL of 7,168 copies/mL at last measurement within a year after index visit. The highest median VLs were observed among patients who:
 - Only received an HIV test at index visit (n=9, 41,832 copies/mL)
 - Had heterosexual HIV transmission risk (n=17, 22,260 copies/mL)
 - Spoke a main language other than English (n=24, 13,539 copies/mL)
 - Were not in HIV care in the year prior to index visit (n=91, 13,282 copies/mL). (Data not shown)

Figure 1. Evidence of HIV care and viral load suppression after index visit among all patients, by HIV care status prior to visit.

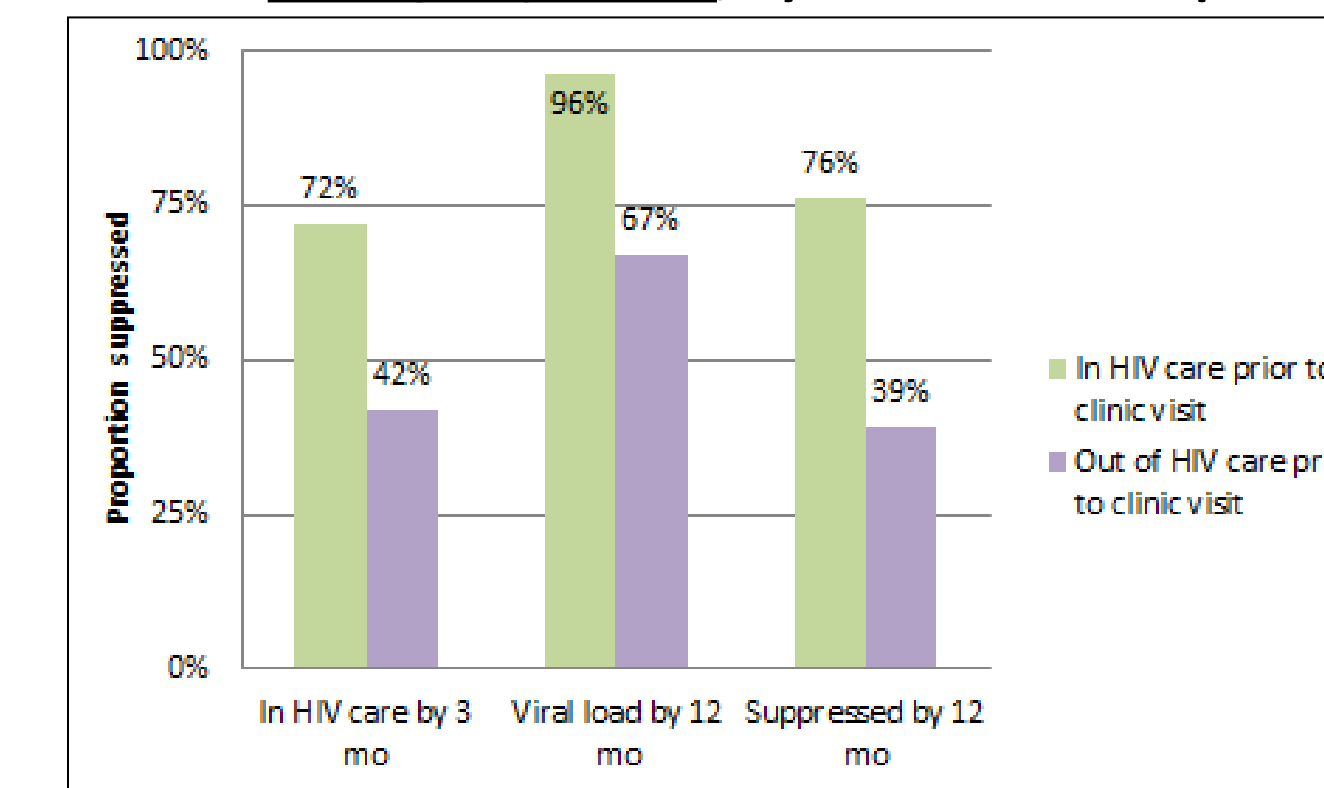


Figure 2. Viral suppression after index visit among patients previously out of HIV care, by subsequent care status.

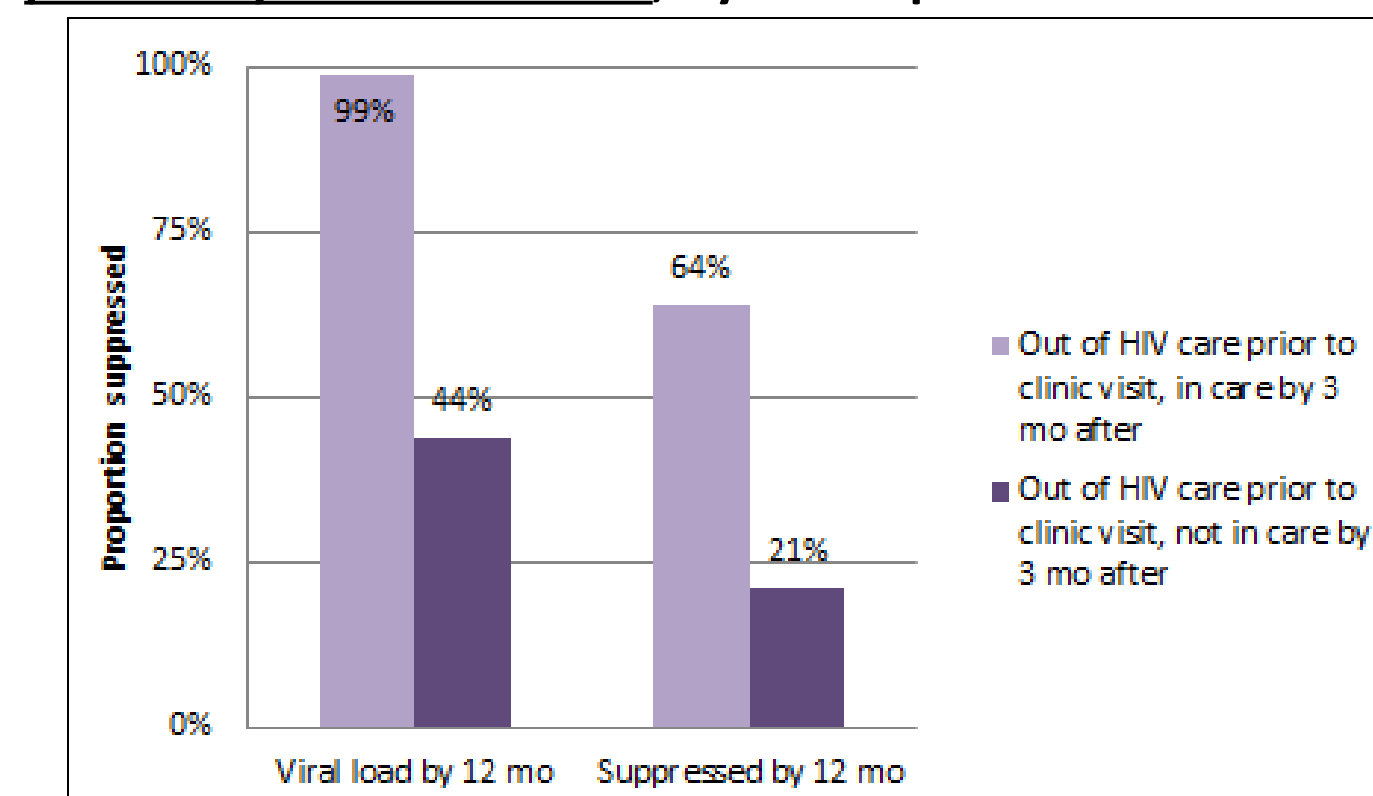


Table 2. Factors associated with viral suppression within a year after index visit (N=1045).

Sociodemographic	N	Bivariate		Multivariable	
		OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Sex at birth					
Male	980	ref	ref	ref	ref
Female	65	1.39 (0.80-2.40)	2.18 (1.16-4.10)*		
Age					
15-24	82	0.78 (0.48-1.27)	0.86 (0.50-1.46)		
25-34	335	ref	ref		
35-50	472	1.57 (1.17-2.10)**	1.15 (0.84-1.59)		
>50	156	2.09 (1.38-3.17)**	1.55 (0.98-2.45)		
Race/ethnicity					
White	155	ref	ref		
Non-Hispanic black	544	0.57 (0.39-0.84)**	0.58 (0.37-0.90)**		
Hispanic	287	0.88 (0.57-1.36)	0.88 (0.54-1.43)		
Other	59	0.46 (0.24-0.85)**	0.36 (0.18-0.70)**		
Residence at the time of index visit					
NYC	1016	ref			
Metro NYC	29	0.45 (0.21-0.94)**			
Neighborhood poverty level					
<10%	107	ref	Ref		
10-20%	227	0.67 (0.41-1.10)	0.66 (0.38-1.15)		
20-30%	423	0.92 (0.58-1.47)	1.00 (0.59-1.70)		
>30%	259	0.53 (0.32-0.86)**	0.51 (0.29-0.89)*		
Unknown (Metro NYC)	29	0.33 (0.14-0.77)**	0.60 (0.24-1.52)		
Sexual health-related					
Time since first known HIV diagnosis					
1 - 3 years	169	ref			
4 - 6 years	233	1.50 (1.00-2.24)*			
> 6 years	643	1.80 (1.27-2.54)**			
HIV care status before index visit					
In care	715	ref	Ref		
Out of care	330	0.21 (0.16-0.27)***	0.21 (0.16-0.29)***		
HIV test receipt at index visit					
Yes	73	0.46 (0.29-0.75)**	0.58 (0.34-1.00)*		
No	972	ref	ref		
STD diagnosis at index visit					
Yes	571	0.70 (0.54-0.90)**			
No	474	ref			

* P-value < 0.05, ** P-value < 0.01, *** P-value < 0.001

Conclusions

- Many HIV+ STD clinic patients are not engaged in HIV care in the period leading up to the clinic visit. These patients are less likely to achieve viral suppression in the year after their visit, pointing to an important opportunity for STD clinics to play a greater role in (re-)linking patients to HIV care.
- Subsequent viral suppression was also markedly less frequent among patients testing positive for 2 or more STDs (46%), indicating an appreciable risk of onward HIV transmission.
- Despite all patients in our study having received HIV diagnoses at least a year prior to their STD clinic visit, 7% were still tested for HIV by the STD clinic, suggesting that they did not opt out or inform the provider about a previous diagnosis prior to testing.
 - After a positive test at the STD clinic visit, these patients would have received intensive (re-)linkage assistance, resulting in increased likelihood of re-linking to HIV care.
- While this group was more likely to have evidence of care in the 3 months following the STD clinic visit than those not tested for HIV, they were less likely to be virally suppressed within 12 months after the visit.
- A better understanding of HIV testing and care access patterns is needed to elucidate the lower likelihood of subsequent viral suppression in this group.
- To help STD clinic staff identify patients who are out of HIV care, a more systematic and rigorous assessment of HIV care information (e.g., from the HIV Surveillance Registry) should occur at the time of the STD clinic visit. A similar system in Louisiana (Louisiana Public Health Information Exchange – LaPHIE) has proven highly successful at re-linking patients to HIV care.⁽⁴⁾

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