

Incidence of sexually transmitted diseases among persons with HIV in New York City, 2000-2010

Abstract #1021

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Background

- Sexually transmitted diseases (STD) are objective markers of ongoing sexual risk behavior among persons with HIV (PWH)
 - Enhanced risk for secondary HIV transmission
- PWH experience high incidence of STD¹⁻⁴
 - 2.4% cumulative incidence of STD among PWH in New York City during 2001-2002¹
- Quantifying incidence of STD among PWH can inform local STD and HIV prevention efforts
 - No measured incidence estimate in NYC since early 2000's

¹Manning et al. *STD* 2007;34(12); ²Taylor et al. *JAIDS* 2013;64(1); ³Hague et al. *STD* 2011;38(4); ⁴Mayer et al. *STD* 2012;39(1).

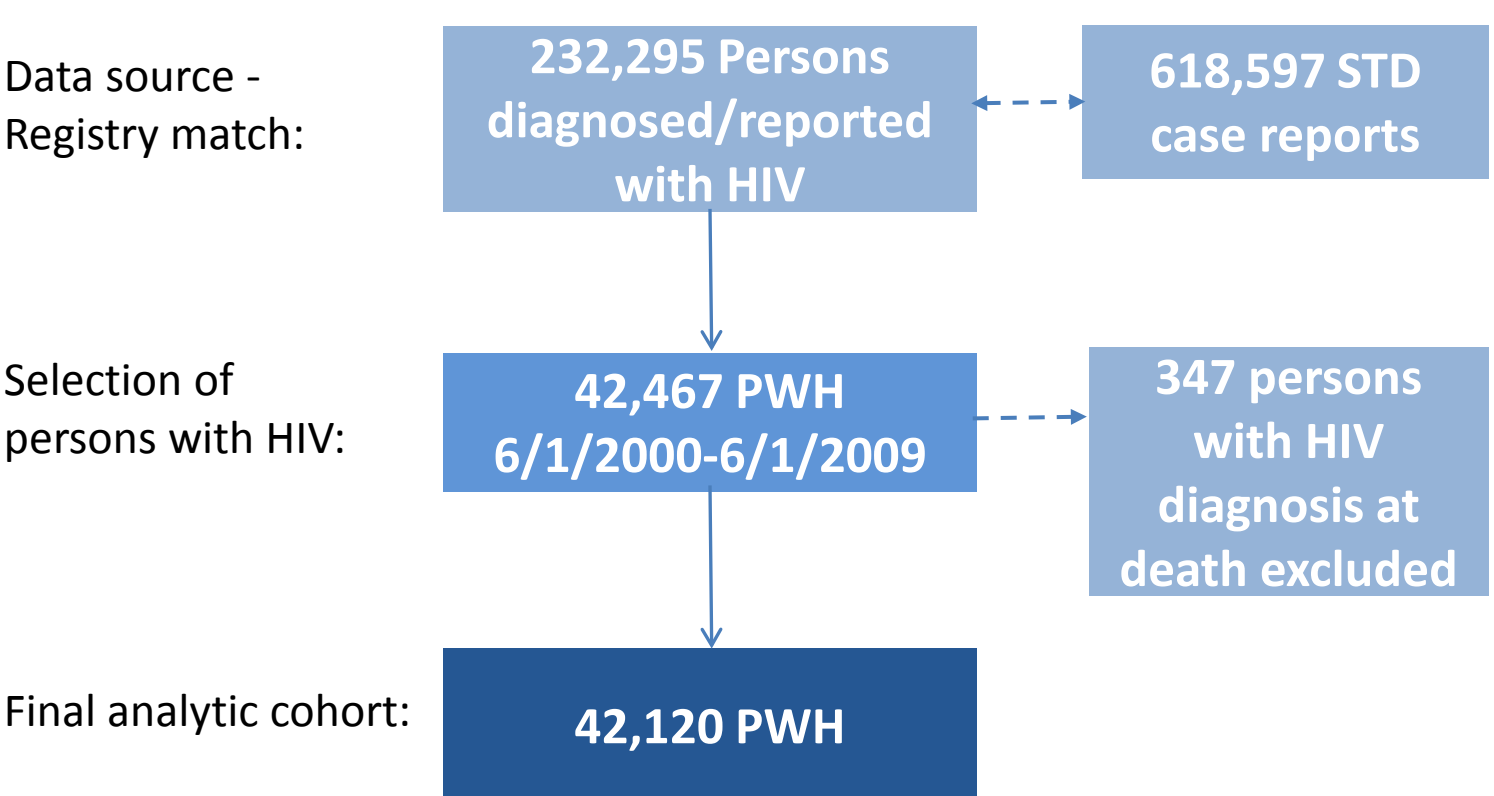
Objective

- To quantify and characterize the incidence of STD following HIV diagnosis among NYC HIV-infected adults, 2000-2010

Methods: Data source for cohort

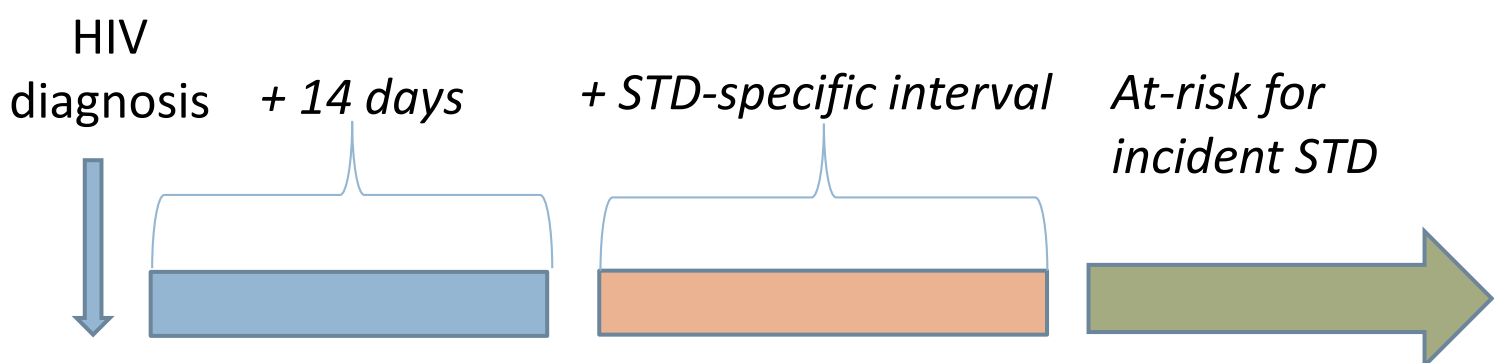
- Analytic cohort drawn from a match of NYC's HIV Surveillance registry and NYC's STD registry
 - Included persons diagnosed and reported with HIV through March 2011 (N=232,295), and STD case reports from January 2000 through June 2010 (N=618,597)
- Match used a deterministic algorithm with 36 match keys reflecting combinations of patient information (name, date of birth, social security number)
- Analytic cohort included persons ≥13 years of age diagnosed with HIV from 6/1/2000-6/1/2009 (persons diagnosed with HIV at death were excluded) (Figure 1)

Figure 1. Analytic cohort



Methods: Measures and outcomes

- PWH (N=42,120) were followed from HIV diagnosis to June 1, 2010 (end of follow-up period)
 - Primary outcome: first incident STD after HIV diagnosis
 - Censored at death or end of follow-up
- Persons were considered to be at risk for incident STD:
 - ≥14 days after HIV diagnosis to ensure patient received HIV result plus STD-specific incubation periods:
 - ≥14 days for chlamydia (total ≥28 days)
 - ≥5 days for gonorrhea (total ≥19 days)
 - Early syphilis by stage:
 - ≥21 days for primary syphilis (total ≥35 days)
 - ≥70 days for secondary syphilis (total ≥84 days)
 - ≥180 days for early latent syphilis (total ≥194 days)

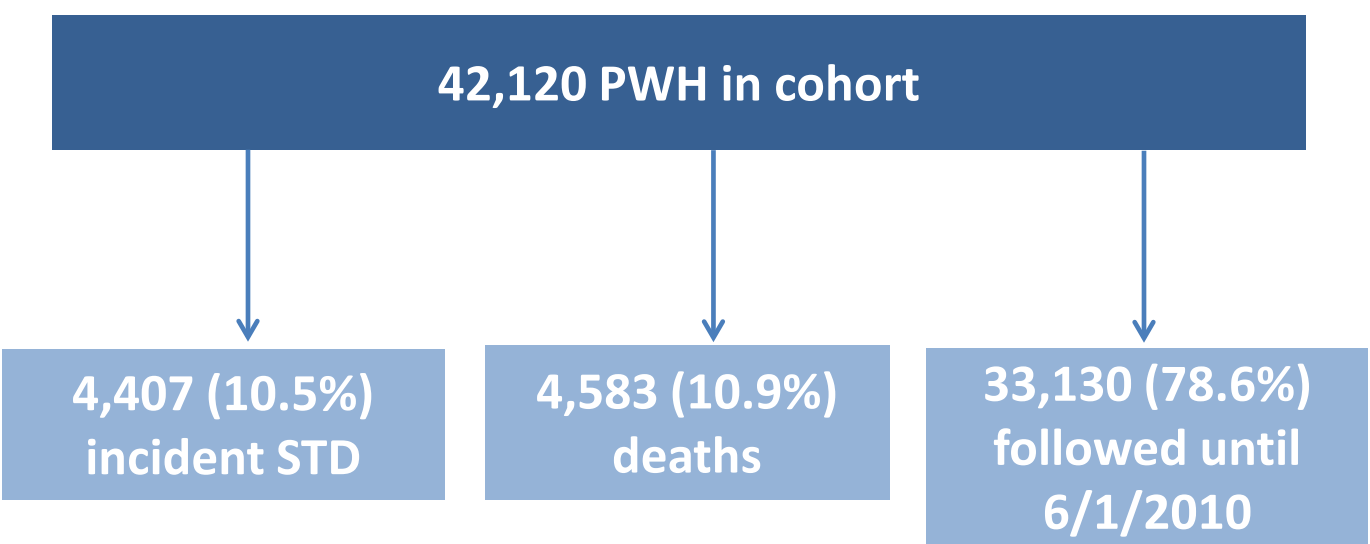


Methods: Statistical analysis

- Outcomes, frequency of incident STD among PWH cohort
- Overall STD incidence rate, incidence rates by demographic subgroups
- Predictors of incident STD (Cox regression)

Results

Cohort follow-up



Frequency of STD in PWH cohort

	Gonorrhea	Chlamydia	Early Syphilis*	Total
All	1,462	1,468	1,477	4,407
Males	1,298 (88.8%)	905 (61.7%)	1,444 (97.8 %)	3,647 (82.8%)
Females	163 (11.2%)	562 (38.3%)	33 (2.2%)	758 (17.2%)

*Includes primary, secondary, and early latent syphilis.

STD incidence

- Cohort incidence rate: 2.0 infections/100 PY**
- Total persons-years (PY): 215,535.7 (median: 4.97, range: 0-10 PY)
- Median time to STD: 1.9 years (range: 19 days to 9.9 years)
 - 28.3% (N=1,245) of STD diagnosed within 1 year of HIV diagnosis; 12.9% (N=567) within 6 months
- 34.2% (1,507/4,407) of persons had ≥1 additional STD diagnosis after incident STD

STD incidence rates among select subgroups of PWH

Overall incidence rate per 100 PY		2.0
Sex	Male	2.5
	Female	1.1
Age group	13 - 19	6.9
	20 - 29	4.0
	30 - 39	2.0
Race/ethnicity	Black	1.9
	Hispanic	1.9
	White	2.9
HIV transmission risk	Men who have sex with men	4.1
	Injection drug use history	0.9
	Heterosexual	1.2

Select predictors of incident STD by sex

		Hazard Ratio	95% Confidence Interval
Males			
Age group (years)	13-19 vs. 50+	11.7	9.1-15.2
	20-29 vs. 50+	8.5	6.7-10.7
Race/ethnicity	Black vs. other/unknown	1.3	1.1-1.6
	White vs. other/unknown	1.4	1.1-1.7
HIV transmission risk	MSM vs. other/unknown	2.5	2.3-2.8
Females			
Age group (years)	13-19 vs. 50+	31.7	19.9-50.4
	20-29 vs. 50+	11.1	7.1-17.5
HIV transmission risk	Heterosexual vs. other/unknown	1.4	1.2-1.6
	Injection drug use vs. other/unknown	1.8	1.4-2.3

Conclusions

- 11-year examination of STD incidence among PWH in NYC
- PWH are acquiring incident STD; elevated rates in subgroups
 - Males/MSM, young persons, whites
 - Findings underscore the need for frequent STD screening and prevention counseling among PWH
 - Short time to incident STD highlights need for education at time of HIV diagnosis about STD, symptoms, safer sex
- STD acquisition by PWH suggests risk for ongoing HIV transmission