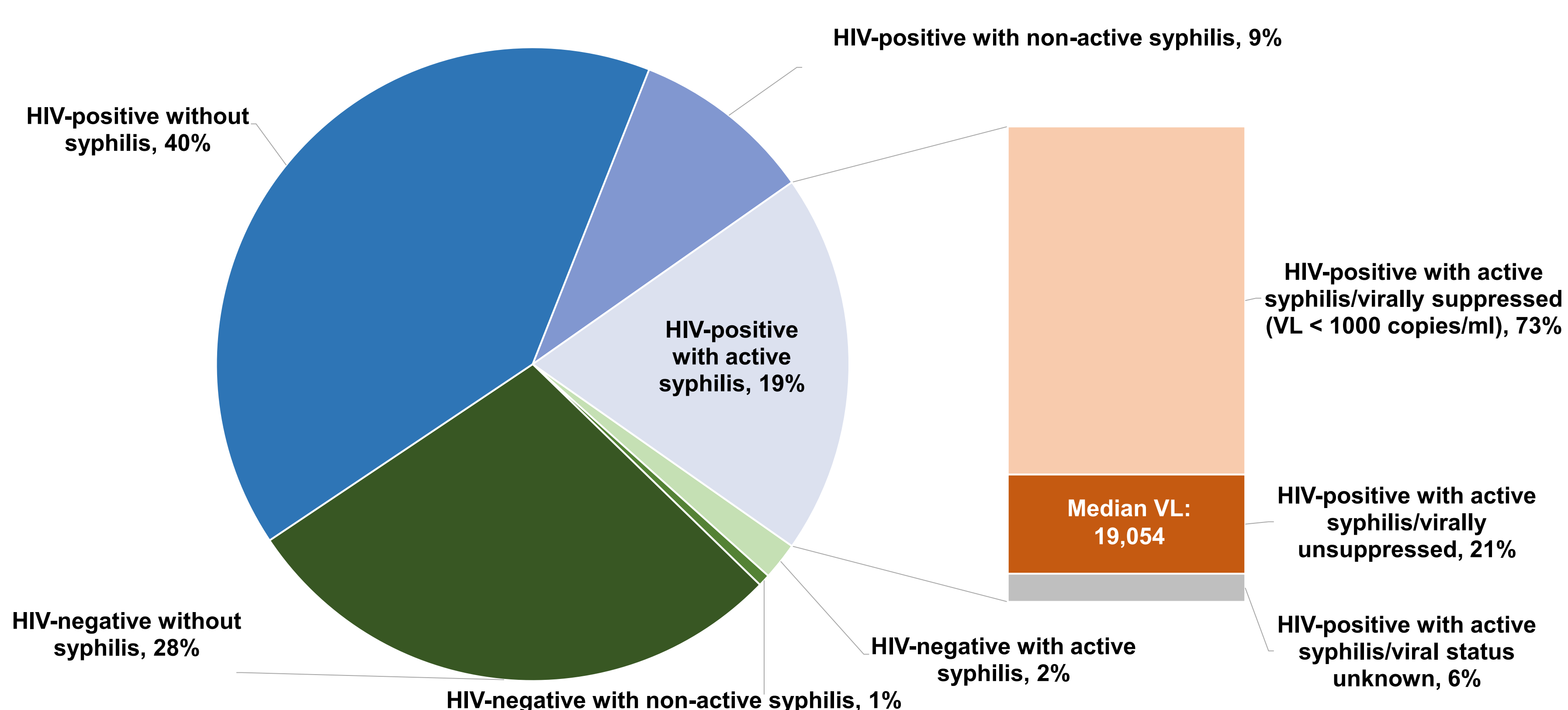


INTRODUCTION

AMPLIFIED TRANSMITTERS OF HIV are those with untreated HIV and a concomitant sexually transmitted infection (STI), which can enhance the infectiousness of HIV to uninfected partners.¹⁻³ HPTN 078 used two methods to identify men who have sex with men (MSM) who were infected with HIV and virally unsuppressed. This study also screened participants for syphilis, giving the study the potential to identify potential amplified transmitters (HIV and syphilis) who are likely to have higher onward transmission risk for both conditions.

RESULTS

FIGURE 1. HIV and Syphilis Infection; HIV Viral Suppression Status



HIV AND SYPHILIS COINFECTION

- 1305 MSM were screened in Atlanta (270), Baltimore (281), Birmingham (466) and Boston (288).
- The overall cohort was older (median age = 40), Black (69%), educated (85% with high school diploma or higher), impoverished (68% <\$20,000 annually) and had access to healthcare (84%).
- Overall, 902 (69%) were HIV-positive and 279 (21%) had active syphilis.
- Across all sites, HIV-positivity ranged from 59% to 90% and active syphilis ranged from 18% to 33%, with Atlanta identifying the highest percentages of HIV, syphilis and HIV/active syphilis coinfection.
- Almost 20% (254/1305) of the cohort were coinfecting with HIV and active syphilis, and of these 1 in 5 (53/254) were virally unsuppressed.
 - 28% (254/902) of those with HIV were coinfecting with active syphilis
 - 91% (254/279) of those with active syphilis were coinfecting with HIV

CONCLUSION

- We found high prevalence of HIV (69%), active syphilis (21%), and HIV/active-syphilis coinfection (19%) in this MSM cohort. Almost all participants with active syphilis were coinfecting with HIV (91%).
 - These data suggest that regular syphilis screening in HIV+ MSM may be warranted.
- Those with HIV/active syphilis coinfection report topping without condoms with more partners – serving as potential amplified transmitters of HIV, and furthering the spread of syphilis.
 - Linking HIV-infected MSM to care, providing syphilis testing and both HIV and syphilis treatment, as well as support for sustained viral suppression, is key to stopping the spread of both HIV and syphilis.

METHODS

MSM were screened for HIV and syphilis in Atlanta, Baltimore, Birmingham and Boston; additional data were collected to determine HIV viral load. In addition, everyone in the cohort was asked to complete a questionnaire that included questions about sexual behavior. The syphilis data (treponemal, non-treponemal and titer) were examined to distinguish between current (active) and past (non-active) infection using CDC guidelines.⁴ Descriptive statistics (count, percent, mean, and median) were used to describe HIV, syphilis and viral load for both methods, and a Pearson's chi-squared test for independence was used to compare these characteristics. Wilcoxon rank sum tests were used to compare sexual behaviors between subgroups.

SEXUAL BEHAVIOR AND HIV/SYPHILIS COINFECTION

- Those with HIV/active syphilis co-infection had a higher number of unique life time partners than those who were HIV-negative ($p < 0.0001$), but the difference between those with HIV/active syphilis coinfection and those who were only infected with HIV was only marginally significant ($p = 0.0582$).
- Those coinfecting with HIV and active syphilis topped a higher number of partners in the past 6 months compared to those who were infected with HIV, but not syphilis ($p = 0.0369$); however, there was no significant difference between those with HIV/active syphilis coinfection and those who were HIV-negative ($p = 0.1129$).
- All other comparisons for unique partners and sex acts between those with HIV/active syphilis coinfection and those with only HIV, between those with HIV/active syphilis coinfection and those who were HIV-negative, and between those with HIV/active syphilis coinfection who were virally suppressed and those who were not virally suppressed were not found to be significant (all p -values > 0.05).
- With no meaningful difference between the categories, only ~40% of all participants reported using a condom during their last MSM anal sex act ($p > 0.05$ for all categories versus those who were HIV-negative).

TABLE 1. Partners and Sex Acts by HIV and Syphilis Infection Status

	HIV-negative (N = 392)*	HIV-positive (N = 902)	HIV-positive without syphilis** (N = 527)	HIV-positive + non-active syphilis (N = 121)	HIV-positive + active syphilis (N = 254)	HIV-positive + active syphilis, virally suppressed (N = 186)	HIV-positive + active syphilis, virally unsuppressed (N = 53)
Life Time Unique Partners (Mean, Median)	35, 10	67, 20	67, 20	32, 17	87, 25	87, 25	76, 35
Last 6 Months							
Unique Partners (Mean, Median)	5, 3	7, 3	7, 3	3, 2	9, 4	9, 4	11, 11
Unique Partners Topped w/o Condom (Mean, Median)	2, 1	2, 1	2, 1	2, 1	3, 1	3, 1	4, 2
Unique Partners Bottomed w/o Condom (Mean, Median)	2, 1	2, 1	2, 1	1, 1	3, 1	3, 1	3, 1
Past Month							
MSM Sex Acts as Top (Mean, Median)	3, 1	4, 2	4, 2	3, 1	4, 2	3, 2	3, 2
MSM Sex Acts as Top with Condom (Mean, Median)	2, 1	2, 1	2, 1	1, 1	1, 1	1, 1	1, 0
MSM Sex Acts as Bottom (Mean, Median)	4, 2	3, 1	4, 2	2, 1	3, 1	3, 1	3, 1
MSM Sex Acts as Bottom with Condom (Mean, Median)	9, 1	5, 1	7, 1	2, 1	1, 1	1, 1	1, 1
Last MSM Anal Sex Act							
Last MSM Anal Sex Act with Condom (N (%) Yes)	149 (38%)	349 (39%)	210 (40%)	48 (40%)	91 (36%)	63 (34%)	20 (38%)

*Includes 11 participants who had an indeterminate or no HIV test result. **Includes 1 participant who was not tested for syphilis.

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