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Introduction and Objective

As *Neisseria gonorrhoea* (GC), *Chlamydia trachomatis* (CT), and Syphilis infections reach an all time high, sexually transmitted infections (STIs) pose an alarming threat to an already vulnerable population struggling with a pandemic. Two factors make their timely diagnosis challenging: frequent asymptomatic presentation and lack of screening, especially at extragenital (i.e. oral and rectal) sites. Studies have suggested that reliance on urogenital (i.e. penile, vaginal, or urine) screening alone misses a large fraction of GC and CT infections.¹⁻³ However, current CDC guidelines only recommend routine testing at extragenital sites of exposure in men who have sex with men (MSM),⁴ despite high frequencies of oral and receptive anal intercourse among heterosexual individuals.⁵

Additionally, STIs including GC and CT have been shown to increase the risk of sexual HIV transmission. In an HIV primary care setting, studies have shown that the early detection and treatment of STIs not only prevents their spread and downstream complications, but may also reduce HIV transmission risk through identifying opportunities for patient counseling about risky sexual behavior and decreasing mucosal inflammation and subsequent elevated HIV RNA levels at the infected site.⁶⁻⁷

We gathered information about the extent of screening as well as predictors of test positivity of asymptomatic GC, CT and syphilis infections among Jefferson's Ryan White HIV clinic population. Our research stresses the importance of universal STI screening among all patients living with HIV.

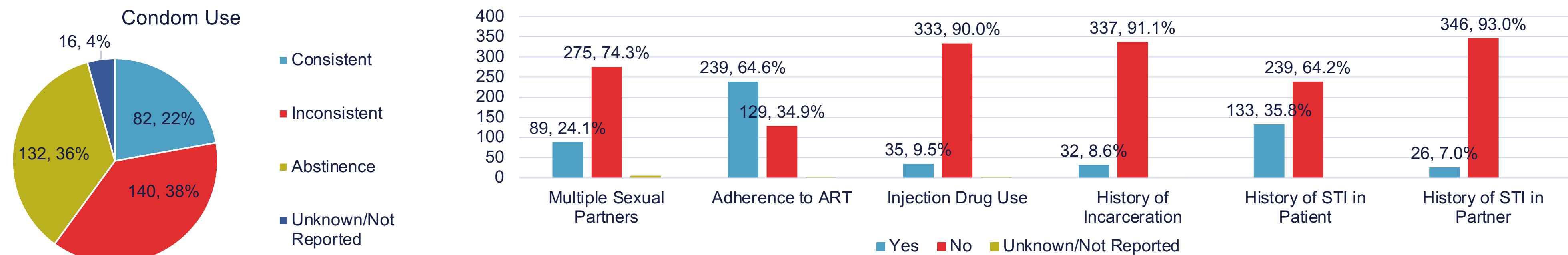
Methods

We analyzed records of 372 patients receiving care at an urban, university-based Ryan White HIV clinic from 2016-2018.

Outcomes included: positive GC/CT nucleic acid amplification tests from genital, pharyngeal, and rectal sites as well as new diagnoses of syphilis. We collected demographic data, risk factors for HIV transmission, time from HIV diagnosis, number of clinic visits, multiple sex partners, partner with STI, and injection drug use.

We used logistic regression to model factors associated with STIs and determined prevalence of asymptomatic STIs.

Figure 1. Demographics and STI Testing Among HIV patients at Ryan White



Demographics	GC/CT Any Tests		GC/CT Positive Tests		Syphilis Any Tests		Syphilis Positive Tests	
	N	(% of total)	N	(% of group)	N	(% of group)	N	(% of group)
Total	372		1039		67		887	
Sex								
Male	229	61.6	753	72.5	65	97.0	603	68.0
Female	138	37.1	262	25.2	2	3.0	269	30.3
Transgender MtF	5	1.3	24	2.3	0	0.0	15	1.7
Race								
White	89	23.9	233	22.4	9	13.4	226	25.5
African American	262	70.4	749	72.1	53	79.1	615	69.3
Hispanic	13	3.5	38	3.7	3	4.5	31	3.5
Asian	6	1.6	8	0.8	1	1.5	10	1.1
Other	2	0.5	11	1.1	1	1.5	5	0.56
Age								
<40 yr	127	34.1	270	26.0	6	9.0	286	32.2
>=40 yr	245	65.9	769	74.0	61	91.0	601	67.8
Sexual Orientation								
Heterosexual	211	56.7	391	37.6	7	10.4	437	49.3
MSM	148	39.8	629	60.5	60	89.6	422	47.6
Other/Unknown	13	3.5	19	1.8	0	0.0	28	3.2

Figure 2. Multivariate Logistic Regressions for Testing Positive for STIs

Outcome	Predictors	Odds ratio (OR)	(95% CI)	p-value
Positive GC/CT	Male	12.20	(2.69 to 55.27)	0.001
	Age <40 yr	3.23	(1.72 to 6.06)	<.001
	Number of ID visits in 2018	1.44	(1.18 to 1.75)	<.001
	History of STI in partner	1.68	(0.99 to 2.86)	0.06
Positive Syphilis	Male	4.62	(1.06 to 20.20)	0.04
	Multiple Sexual Partners	3.68	(1.69 to 8.02)	0.001
	Time from HIV Diagnosis (days)	0.94	(0.89 to 0.99)	0.02

Figure 3. Prevalence of Asymptomatic STI Infections

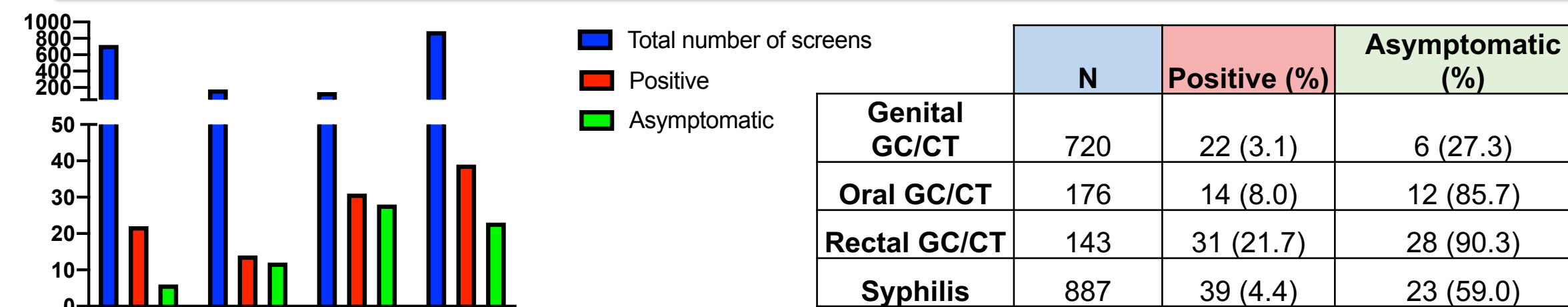


Figure 3. High rates of asymptomatic oral (85.7%) and rectal (90.3%) GC/CT compared to genital, i.e. penile, vaginal, or urine samples, (27.3%) GC/CT infections among Jefferson's Ryan White population. New cases of syphilis were also likely to present asymptotically (59.0%).

Conclusions

- Asymptomatic STIs are common among Jefferson's Ryan White population, and are especially unlikely to present with symptoms at extragenital (i.e. oral and rectal) sites
- Knowing the risk factors associated with becoming infected with an STI can inform screening strategies among urban HIV populations
- Given the high rate of asymptomatic infections, our results emphasize the need for universal STI screening to increase diagnoses and treatment, ultimately preventing downstream complications and HIV transmission risk to patients and their partners.

Acknowledgements and References

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