

recurrent incidence rate was 72.1 per 100 person-years with GC, CT, and syphilis as the most common recurrent infections (Table 1). Of all GC and CT infections, the majority were rectal (48.7% and 49.9%, respectively) (Table 2). Only 65.8% of patients with rectal GC and 68.5% with rectal CT infections reported recent receptive anal sex (Table 3).

Table 1: First and recurrent incidence rates of any STI and individual STIs per 100 person-years

Type	N at Risk	Confirmed First STI ¹ (% at Risk)	First STI Incidence (95% CI) per 100 Person-Years	Recurrent STI Incidence (95% CI) per 100 Person-Years
Any STI	621	520 (83.7%)	35.75 (32.74, 38.96)	72.10 (68.34, 76.01)
Individual STIs				
Gonorrhea	621	298 (48.0%)	10.77 (9.59, 12.07)	34.75 (31.24, 38.55)
Chlamydia	621	282 (45.4%)	10.23 (9.07, 11.49)	23.05 (20.22, 26.17)
Trichomonas	621	48 (7.7%)	1.22 (0.88, 1.63)	15.49 (10.45, 22.11)
HPV	621	341 (54.9%)	13.98 (12.54, 15.55)	
BV	621	65 (10.5%)	1.89 (1.46, 2.41)	14.72 (11.09, 19.16)
Syphilis	621	223 (35.9%)	7.77 (6.79, 8.86)	19.43 (16.48, 22.75)
LGV	621	77 (12.4%)	2.18 (1.72, 2.72)	10.10 (6.71, 14.60)
Chancroid	621	1 (0.2%)	0.03 (0.00, 0.15)	0 (NA)
Herpes	621	73 (11.8%)	2.05 (1.61, 2.58)	
Hepatitis C	621	11 (1.8%)	0.29 (0.15, 0.52)	

¹Including patients with historical STI events

Abbreviations: STI, sexually transmitted infection; HPV, human papilloma virus; BV, bacterial vaginosis; LGV, lymphogranuloma venereum

Table 2: STIs by site, all infections

Characteristic	Pharyngeal	Rectal	Urogenital
Gonorrhea, N=655	191 (29.2%)	319 (48.7%)	257 (39.2%)
Chlamydia, N=521	32 (6.1%)	260 (49.9%)	246 (47.2%)

Characteristic	Gonorrhea	Chlamydia
	N=655	N=521
Pharyngeal Only	109 (16.6%)	18 (3.5%)
Rectal Only	219 (33.4%)	234 (44.9%)
Urogenital Only	204 (31.2%)	230 (44.2%)
Pharyngeal + Rectal	58 (8.9%)	12 (2.3%)
Pharyngeal + Urogenital	11 (1.7%)	2 (0.4%)
Rectal + Urogenital	29 (4.4%)	14 (2.7%)
Pharyngeal + Rectal + Urogenital	13 (2%)	0 (0%)
No Indication	12 (1.8%)	11 (2.1%)

Table 3: Reported exposure history vs. STI site positivity

Site Exposure	Gonorrhea	Chlamydia
Pharyngeal		
<i>Reported Oral Sex</i>		
Yes	107 (56%)	16 (50%)
No	37 (19.4%)	5 (15.6%)
Unknown	47 (24.6%)	11 (34.4%)
Rectal		
<i>Reported Anal Receptive Sex</i>		
Yes	210 (65.8%)	178 (68.5%)
No	43 (13.9%)	36 (13.9%)
Unknown	66 (20.7%)	46 (17.7%)
Urogenital		
<i>Reported Anal Insertive¹ Sex</i>		
Yes	116 (54.5%)	60 (44.1%)
No	45 (21.1%)	38 (27.9%)
Unknown	52 (24.4%)	38 (27.9%)
<i>Reported Vaginal² Sex</i>		
Yes	24 (54.5%)	60 (54.5%)
No	13 (29.6%)	21 (19.1%)
Unknown	7 (15.9%)	29 (26.4%)

¹Males and transgender women only; ²Women and transgender men only

Conclusion: Our study demonstrates disproportionately high incidence and re-infection rates of co-STIs in HIV-positive AYAs. Furthermore, many patients did not report exposure at their site of infection. If screening is done based off reported exposure history alone, many infections may be missed. Our data support the urgent need for increased STI screening in this population, including routine extragenital testing for GC and CT even without reported exposure at these sites.

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1538. Pilot Study of Self-collected Pharyngeal Testing for Chlamydia and Gonorrhea in the Setting of COVID19 Restrictions

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Session: P-69. Sexually Transmitted Infections

Background. Given that many youth and young adults utilize multiple orifices during sexual activity, testing for STIs from multiple anatomical sites can increase rates of diagnosis. However, during the COVID pandemic, obtaining oral swabs by clinical staff was deemed an unacceptable COVID transmission risk and was discontinued in our clinic. To circumvent this obstacle to diagnosis, clinic staff developed a work-around of obtaining patient collected pharyngeal swabs for STI testing. This abstract reviews the results of this pilot intervention.

Methods. Patients presenting to an urban youth family planning/STI clinic who desired STI testing and ever engaged in oral sex were offered pharyngeal testing for

chlamydia (CT) and gonorrhea (GC). Patients were instructed on how to obtain an oral sample, and subsequently sent outside of the clinic to obtain their individual sample. Chart review was conducted by clinic staff of a two month period during which this protocol was in place, and the following variables were collected: gender, sexual orientation, race/ethnicity, and STD testing results by anatomic site. Simple descriptive statistical analysis was used.

Results. 146 patients received a GC/CT test from > 1 anatomical site, with 34 patients having > 1 positive result. All pharyngeal samples were self-collected. Four patients were positive for GC/CT from throat samples only (12% of positive tests). All were biologically female, including one transgender FTM. Sexual orientation was split evenly between bisexual and heterosexual. Reported race/ethnicity included two African-American, one white, and one "Filipino". For comparison, of the overall sub-sample of patients with positive GC/CT results, patients identified as 53% female, 44% male, and 3% FTM; 74% "straight", 15% bisexual, 9% "gay", and 3% did not disclose; 29% white, 50% African-American, 21% unknown as other; and 11% Hispanic. Twelve patients were positive for GC/CT from the throat and either rectum and/or urine/vagina/endocervix (35% of positive tests).

Conclusion. Our experience demonstrates that obstacles created by the COVID crisis can be circumvented with creative strategies. We were able to pick up 12% and 35% of total infections by self-collected pharyngeal swabs in throat only and throat plus other sites, respectively.

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1539. Pilot Study of Sexual Networks and Sexually Transmitted Infection Risk in a Military Population

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Session: P-69. Sexually Transmitted Infections

Background. In the U.S., military members experience a higher incidence of sexually transmitted infections (STIs) than the age and gender-adjusted general population, placing a costly and preventable burden on the military health system (MHS). These increased rates are likely due to differences in both individual and network level risk factors. To assess the feasibility of a survey examining the impact of sexual network risk factors on risk, a survey assessing STI individual and network level risk factors to include a 90-day sexual partnership inventory was piloted at a single military medical center.

Methods. A sample of 50 military beneficiaries completed a computer-assisted self-interview (CASI) cross-sectional egocentric survey administered on a tablet. Demographical and clinical data were captured from the electronic medical record. Non-parametric statistics were used to analyze the data.

Results. 45 of 50 subjects (90%) completed the survey. 40 (88%) subjects completed at least one partnership survey and reported 1 to 20 partners per subject. Respondents were mostly active duty (91.8%) and had been active duty for less than five years (68.2%). Common risk behaviors were explored and included meeting partners online (68.75%) and having partners who use drugs (48.94%) or are heavy drinkers (44.68%). Partnership inventories suggest sexual concurrency and disassortative mixing on age, racial and ethnic groups, and military service.

Conclusion. While previous studies demonstrate that service members will complete sexual risk behavior surveys, this pilot egocentric partnership study demonstrates their willingness to provide detailed information on risk behaviors as well as detailed information on sexual partnerships. While we report on statistically significant associations, these may be subject to bias due to the underlying characteristics of the source population. As a result, these data will not likely be reflected in the full study population. 80% of pilot subjects completed the questionnaire and submitted at least one partnership survey, indicating the possibility of gathering more diverse individual sexual risk questionnaires from active duty service members. Based on these data, a multisite study of sexual networks was implemented in the MHS and is currently under analysis.

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1540. Prevalence and Risk Factors associated with HIV and Syphilis Co-infection in the African Cohort Study

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The African Cohort Study (AFRICOS)

Session: P-69. Sexually Transmitted Infections

Background. Each year, 6 million new syphilis cases are diagnosed globally. Seroprevalence studies in low-income countries (LIC) are limited but is estimated at 3.5-4.6%. Few studies have researched prevalence of sexually transmitted infections (STIs) in people living with human immunodeficiency virus (HIV; PLWH). Current guidelines for PLWH in LIC recommend STI testing for symptomatic persons and those with a new HIV diagnosis, which may lead to high rates of undiagnosed STIs. Here we provide updated STI prevalence rates and risk factors for syphilis co-infection in PLWH in the African Cohort Study (AFRICOS).

Methods. AFRICOS is an ongoing longitudinal study enrolling PLWH in four African countries where participants undergo routine medical exams, sociobehavioral questionnaires, and laboratory extraction for study purposes every 6 months. Enrollment syphilis data was extracted to determine screen-positive and serologically-confirmed syphilis prevalence rates for this study. Bivariate and multivariate analysis were performed to determine risk factors for HIV and syphilis co-infection and reported as adjusted prevalence ratios (APR) with 95% confidence intervals (CI).

Results. Between January 2013 and March 1, 2020, 2883 PLWH enrolled. Prevalence of screen-positive and confirmed syphilis was 5.2% and 3%, respectively. Among PLWH with confirmed syphilis, 58.6% were women, mean age was 37.8 years old (IQR 31.658, 45.011, p = 0.068), and genital ulcers were documented in 1.61% participants. In the multivariate model, participants with confirmed syphilis co-infection were more likely to have none or some primary education [2.65 (1.34, 5.230)], demonstrate impaired cognition [2.1 (1.25, 3.590)], and consume alcohol [1.88 (1.19, 2.970)] compared to those without syphilis.

Conclusion. In conclusion, our findings suggest that syphilis rates remain elevated at endemic levels in LIC where diagnosis remains challenging. Based on our analysis, current STI guidelines for PLWH in Africa are likely leading to a large proportion of undiagnosed STIs and potentially contributing to community spread. While this study observed that lower education level, alcoholism, and impaired cognition were associated with syphilis co-infection, further studies are needed to investigate these associations.

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1541. Prevalence of Asymptomatic Sexually Transmitted Infections (STIs) in a Philadelphia Ryan White HIV population

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Session: P-69. Sexually Transmitted Infections

Background: In 2018, Philadelphia County ranked 7th, 8th and 16th for chlamydia (CT), gonorrhea (GC), and syphilis cases, respectively, in the Centers for Disease Control (CDC) STI Surveillance Report. Asymptomatic presentations and lack of routine screening, especially at extragenital (i.e., pharyngeal and rectal) sites, increase the challenge of timely diagnosis and treatment. We determined extent of screening, reported symptoms, and asymptomatic infections.

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.

Results. Of 372 participants, 234 (63%) were men, 262 (70%) were Black, 245 (66%) were over 40 years old, 148 (40%) identified as MSM, 140 (38%) reported inconsistent condom use, 89 (24%) reported multiple sex partners, 35 (9%) reported injection drug use, 141 (38%) had past STI, and 26 (7%) had partner with past STI. Mean time from HIV diagnosis was 12.3 years (SD, 8.8) and mean number of clinic visits was 2/year. Testing included 720 GC/CT urine, 176 GC/CT pharyngeal, 143 GC/CT rectal swabs and 887 syphilis blood tests. Asymptomatic GC/CT infections were seen in urine 6/22 (27%), pharyngeal 12/14 (86%) and rectal 28/31 (90%) swabs. And, of 39 new diagnoses of syphilis, 23 (59%) were asymptomatic. In multivariate analysis, men (aOR, 12.2, 95%CI, 2.7-55.3), < 40 years (3.2, 1.7-6.1), with clinic visit in 2018 (1.4, 1.2-1.8), and partner with STI (1.7, 0.9-2.8) were more likely to have a positive GC/CT test. Patients with positive syphilis test were more likely men (4.6, 1.1-20.2), with multiple sex partners (3.7, 1.7-8.0), and more recent HIV diagnosis (1.1, 1.0-1.1).

Prevalence of Asymptomatic STIs

	GC/CT any Tests		GC/CT any Positive Tests		GC/CT any Asymptomatic	
	N	%	N	%	N	%
Genital GC/CT	720	22	3.1%	6	27.3%	
Oral GC/CT	176	14	8.0%	12	85.7%	
Rectal GC/CT	143	31	21.7%	28	90.3%	
	Syphilis Tests		Syphilis Positive Tests		Syphilis Asymptomatic	
	N	%	N	%	N	%
Syphilis	887	39	4.4%	23	59.0%	

Conclusion: Results indicate the importance of routine, site-specific STI screening among patients living with HIV. Our findings can inform screening strategies among urban HIV populations.

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1542. Provider Uptake of Extragenital Screening for Gonorrhea and Chlamydia in Active Duty Air Force Members with Incident HIV Diagnosis

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Session: P-69. Sexually Transmitted Infections

Background. The prevalence of Neisseria gonorrhoea (GC) and Chlamydia trachomatis (CT) is much higher at extragenital anatomic sites among men who have sex with men (MSM) with HIV infection. National guidelines recommend that all MSM with HIV infection undergo screening for extragenital sexually transmitted infections (EG-STIs), however uptake is low in many primary care settings. We evaluated EG-STI screening by primary care providers (PCPs) for US Air Force (USAF) members with incident HIV infection.

Methods. All USAF members newly diagnosed with HIV infection who received initial HIV specialty care with Infectious Disease (ID) providers at Brooke Army Medical Center from 2016-2018 (n=98) were included. A retrospective chart review was conducted to evaluate STI screening performed by PCPs within 1 week of HIV diagnosis compared to screening at entry into ID care. Demographic, clinical, laboratory and behavioral risk data were collected. STI screening included GC/CT EG-STIs, urethral GC/CT, syphilis, and hepatitis B and C.

Results. Patients were predominantly male (97.9%) with a median age of 26 (IQR 23, 32) years at HIV diagnosis (Table 1). A previous history of STIs was reported in 53 (54.1%) patients and the majority of males self-identified as MSM (66.3%) or bisexual (22.5%). The median time from HIV diagnosis to ID evaluation was 26 days (IQR 9, 33). PCPs performed any STI screening in 61 (62.2%) patients (Table 2). EG-STI screening was conducted in 3 (3.1%) patients overall and in (3.4%) MSM/bisexuals. A total of 31 (31.6%) patients had missed STIs; the majority due to EG-STIs of the rectum (71%) and pharynx (21.9%). All EG-STIs would have been missed by urethral GC/CT screening alone.

Table 1

Characteristics	No. (%) or Median (IQR)
Number, N	98 (100.0)
Median age (years)	26 (23, 32)
Gender	
Male	96 (97.9)
Female	2 (2.1)
Rank	
Enlisted	90 (91.8)
Officer	8 (8.2)
Race	
Black	36 (36.7)
White	36 (36.7)
Asian/Native Hawaiian/Pacific Islander	4 (4.1)
Other/unknown	22 (22.4)
Ethnicity	
Hispanic	17 (17.3)
Non-Hispanic	66 (67.3)
Other/unknown	15 (15.3)
Sexual practices^a	
MSM	65 (66.3)
Bisexual	22 (22.5)
MSW	9 (9.2)
Laboratory markers	
Median CD4 count (cells/ μ L)	535 (392.5, 680.0)
Median viral load (\log_{10} copies/mL)	4.52 (4.1, 5.0)
Previous history of any STI	53 (54.1)

HIV, human immunodeficiency virus; IQR, interquartile range; MSM, men who have sex with men; MSW, men who have sex with women; STI, sexually transmitted infection
^aBoth females reported sex with men exclusively.