

intercourse (AI) in the last 90 days. Of these women, only 113 (58.2%) also ordered and returned rectal kits for testing. An additional 95 kits were ordered and returned by women who did not report recent AI (82), did not return a vaginal swab (5), or did not answer the AI question on the vaginal questionnaire (8). From a total of 406 rectal kits ordered by women overall, 208 (51.2%) were returned; three had no consent form; thus, 205 were tested. Of those tested, 26 (12.7%) were positive for chlamydia, 5 (2.4%) were positive for gonorrhoea, and 13 (6.3%) were positive for trichomoniasis. Two of these samples were positive for both Chlamydia and gonorrhoea, two for both chlamydia and trichomonas, and one for all three STIs. The total number of women testing positive for any rectal STI was 38 (18.5%), and 35 of these women also received and returned vaginal swabs, 34 of which were tested. Of those tested, 24 (70.5%) were positive for at least one of the three STIs vaginally, indicating that women who tested positive for rectal STIs were at very high risk for vaginal STIs. Of the 38 women with rectal STIs, the median age was 22 yr. and the median age of first rectal sex was 20 yr. Questionnaires demonstrated 93.6% were single, 62.5% were Black, and 21.9% were White. Of the women with rectal STIs, 67.7% reported no symptoms, 12.0% reported no rectal partners in previous yr, 56.0% reported one partner, and 32% reported 2–4 partners. Only 16.0% reported having a new rectal partner in the last 3 months. Half (50.0%) reported never using condoms, 15.4% reported they always used condoms, 15.4% reported using condoms most of the time, and 19.2% reported using condoms some of the time.

Conclusions Public health officials should be aware that AI and rectal STIs are not uncommon among sexually active women. Future STI screening programs should consider rectal infections.

01-S07.03 PREVALENCE AND CORRELATES OF RECTAL CHLAMYDIA AND GONORRHOEA AMONG FEMALE STD CLINIC CLIENTS

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Background The prevalence and correlates of rectal sexually transmitted infections (STI) are well described among men who report receptive anal intercourse (AI). However, very little is known about the epidemiology of rectal STIs among women.

Methods We conducted a cross-sectional study of women attending twelve public STD clinics in Los Angeles County, California. Women were eligible for inclusion in this study if they reported AI in the previous 90 days, were tested for rectal chlamydia (CT) and gonorrhoea (GC), and were seen between January 2008 and December 2009. Data collected included demographics, types of sexual contact, substance use, other risk behaviours, and STI results. Results Among the 716 females included in this analysis, the median age was 28 years (range 14–60), 40% were Hispanic, 37% African American, and 15% White. The prevalence of CT and GC by anatomic site was: 11.8% (n=83) urogenital CT, 14.2% (n=100) rectal CT, 2.7% (n=19) urogenital GC, and 3.0% (n=21) rectal GC. Among positives, 27% of CT cases and 27% of GC cases had rectal only infections. Among women ≥25 years the prevalence of rectal infections was higher among those incarcerated in the past year (39.4% vs 22.1%; p value=0.03) and those who reported sex with an injection drug user (50.0% vs 23.3%; p value=0.05). Among women >25 years the prevalence of rectal infections was higher among those with longer term sex partners (ie, >90 days; 12.6% vs 5.9%; p value=0.03), and those who reported substance use (14.8% vs 8.3%; p value=0.04). While the number of women with a rectal-only

infections (ie, no urogenital infection; n=33) was small, similar trends were observed. After controlling for age and race/ethnicity, among women ≥25 years those incarcerated in the previous year were more likely to have a rectal infection (adjusted OR [AOR]=2.55; 95% CI 1.14% to 5.71%). Among women >25 years, after controlling for race/ethnicity and age, those who reported substance use were more likely to have a rectal infection (AOR=2.28; 95% CI 1.14% to 4.55%) while those reporting new sex partners were less likely to have a rectal infection (AOR=0.38; 95% CI 0.16% to 0.88%).

Conclusion These findings highlight that the prevalence of rectal Chlamydia and gonorrhoea among women is similar to that of urogenital infections and a relatively large number of infections would be missed in the absence of rectal testing. Factors associated with rectal infections may differ by age.

01-S07.04 MANY MISSED STI WHEN ONLY TESTING UROGENITALLY WITHOUT SYSTEMATIC ANORECTAL AND OROPHARYNGEAL SCREENING IN SWINGERS AND MSM

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Background Currently, risk groups are tested only urogenitally by most healthcare providers like general practitioners and STI clinics. Only on indication mostly guided by symptoms anorectal and/or oropharyngeal tests are performed. Patient identification and thereby adequate treatment and interruption of the chain of transmission can be hampered when patients are positive at another anatomic site than sampled for testing. It is unknown how large this potentially missed STI burden in healthcare is. In this study we assessed the burden of undetected STI in high risk heterosexuals (swingers) and men who have sex with men (MSM), based on systematic testing at three anatomical sites.

Methods All MSM and high risk heterosexuals that is, swingers, who as a couple have sex with other couples, were systematically screened for urogenital, anorectal and oropharyngeal STI at our STI Centre in 2010. This comprised 762 swinger consultations and 597 (non swinging) MSM consultations. One third of the male swingers reported to have sex with men. Prevalences of Chlamydia trachomatis (CT) and Neisseria gonorrhoea (NG), and STI (CT and/or NG) were calculated on multiple anatomical sites as well as the proportion of anorectal and oropharyngeal diagnosis that would have been missed if screened urogenital only.

Results Prevalences were 7% and 10% for CT, and 3% and 5% for NG in swingers and MSM, respectively (Abstract O1-S07.04 table 1). Of all anorectal CT in MSM 86% (n=42) was diagnosed without a urogenital CT, for NG this was 65% (n=11). Seventy-five per cent (n=6) of all oropharyngeal CT and 69% (n=11) of all oropharyngeal NG diagnoses would have been missed if MSM had been tested urogenital only. Prevalence of anorectal CT was higher than that of urogenital CT in female swingers. The proportions of missed anorectal diagnosis for CT were 50% (n=4) and 24% (n=5) for male and female swingers, respectively. No anorectal CT diagnosis was missed in male swingers, but in female swingers this was 67% (n=2). All oropharyngeal CT (n=6) and nearly all NG (91.7%, n=11) infections in swingers were diagnosed without a urogenital infection.

Abstract O1-S07.04 Table 1 Prevalences of CT and NG in swingers (M/F) and MSM systematically screened on three anatomical sites

	Swinger total N=762 % (n)	Swinger M N=386 % (n)	Swinger F N=375 % (n)	MSM N=597 % (n)
CT	7.0% (53)	7.0% (27)	6.9% (26)	9.9% (59)
CT urogenital	5.1% (39)	5.2% (20)	5.1% (19)	2.3% (14)
CT anorectal	3.8% (29)	2.1% (8)	5.6% (21)	8.2% (49)
CT oropharyngeal	0.8% (6)	1.0% (4)	0.5% (2)	1.3% (8)
GO	2.6% (20)	2.1% (8)	3.2% (12)	5.0% (30)
GO urogenital	0.9% (7)	0.8% (3)	1.1% (4)	1.8% (11)
GO anorectal	0.5% (4)	0.3% (1)	0.8% (3)	2.8% (17)
GO oropharyngeal	1.6% (12)	1.3% (5)	1.9% (7)	2.7% (16)

Conclusion MSM and female swingers have high prevalences of anorectal CT which are often diagnosed without a urogenital infection. Therefore these risk groups need a targeted screening strategies including anorectal testing. The prevalence of oropharyngeal STI is relatively low, but it is often an isolated infection and therefore missed by the current screening strategy.

O1-S07.05 RARE EVENT: RECTAL SPECIMEN COLLECTION FROM MALES FOR CHLAMYDIAL INFECTION IN THE USA

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Background US guidelines recommend annual Chlamydia screening of the rectum and urethra among men who have sex with men (MSM) with sexual exposure at these anatomic sites. Routine pharyngeal chlamydia screening is not recommended. About 6% of US males have a history of sex with men. The prevalence of rectal chlamydia has consistently been high among MSM with a history of receptive anal sex. One study indicated that up to 53% of chlamydial infections would be missed and not treated if only urethral testing was performed among MSM. We examined data from a large commercial laboratory corporation with a substantial share of the US market and testing available across all 50 states, that also offers rectal and pharyngeal testing with nucleic acid amplification tests (NAAT), to estimate the frequency and positivity of specimens collected from men by anatomic site for chlamydia testing.

Methods Data for all Chlamydia testing methods was obtained by a large commercial laboratory between June 2008 and July 2010. The data set was then queried to obtain testing performed on males and analysed for anatomic site, test type, test result and age. Urethral and urine specimens were assumed to be testing for urethral infections.

Results Chlamydia testing was performed on 227 188 specimens from men: 98.2% urethral, 1.3% rectal, and 0.5% pharyngeal. The age distribution of those tested was: 2.4% <15 years, 15.0% 15–19 years, 15.7% 20–24 years, 15.6% 25–29 years, 12.5% 30–34 years, 10.8% 35–39 years, 10.0% 40–44 years, and 18.0% >44 years. Chlamydia positivity varied by anatomic site (8.7% rectal, 6.9% urethral, and 3.5% pharyngeal), and by age (2.5% <15 years, 13.2% 15–19 years, 12.5% 20–24 years, 7.7% 25–29 years, 5.3% 30–34 years, 3.9% 35–39 years, 3.1% 40–44 years, and 1.7% >44 years). Of 2918 rectal specimens, 17.8% were tested by culture and 75.5% by NAAT, compared to 93.5% of urethral specimens tested by NAAT.

Conclusions Given the sexual practices of men in the US, it appears that only a small proportion of MSM are appropriately screened for rectal Chlamydia. Lack of FDA clearance for these specimen sources may contribute to the small proportion of MSM being screened for rectal Chlamydia. Interventions to increase rectal chlamydial testing among MSM are needed. Because data from this corporation represents a large proportion of testing in the US, it could be used to

monitor changes in chlamydia testing practice among men in the future.

O1-S07.06 LYMPHOGRANULOMA VENEREUM IN THE UK: IS THERE EVIDENCE FOR RECTAL TO RECTAL TRANSMISSION? RESULTS OF A MULTICENTER CASE CONTROL STUDY

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Background The outbreak of lymphogranuloma venereum (LGV) in men who have sex with men (MSM) in the UK is ongoing, with over 500 cases diagnosed in 2010 alone. Control efforts have been limited by a lack of understanding of the epidemiology, particularly transmission. The majority of cases are rectal with small numbers of urogenital or pharyngeal infections. No significant reservoir of asymptomatic or undiagnosed infection has been identified. The possibility of rectal to rectal transmission is suggested by studies showing an association of LGV with fisting, use of sex toys and enemas. We aim to identify risk factors to better understand transmission.

Methods A case control study of LGV in six UK clinics from 2009 to the end of 2010. Confirmed cases of LGV in MSM were compared with symptomatic and asymptomatic controls. Clinical and behavioural data were collected using a web-based computer-assisted self-interview and linked to web-based clinical report forms (CRF). We used a two-stage process to construct multivariable logistic regression models in order to control for confounding and interaction between risk factors.

Results We have recruited 99 cases, 86 symptomatic and 88 asymptomatic controls. There were 94 rectal cases (including one who also had pharyngeal LGV), two urethral and one genital ulcer (two CRFs outstanding). In univariate analysis, LGV was significantly associated with many factors; the strongest associations were with HIV infection, specific anal sex practices (including unprotected receptive and insertive intercourse, rimming, use of toys, fisting, douching), meeting partners through the internet or in a backroom, and use of stimulant drugs. In final multivariable logistic regression models HIV-positivity, fisting, younger age at first clinic attendance and recent use of methamphetamine remained significant predictors of LGV when compared to asymptomatic controls. Compared to symptomatic controls, unprotected insertive anal intercourse was the only significant risk factor in the final model.

Conclusions Men reporting both insertive and receptive anal sex practices are at highest risk of LGV. Rectal to rectal transmission may be occurring with the organism being transferred via toys, fingers and penises; transient colonisation of the urethra may explain the low incidence of urethral LGV. Improved hygiene measures may have an important role in reducing transmission.

Epidemiology oral session 8: STIs and HIV in female sex workers

O1-S08.01 HIGH HIV PREVALENCE WITHIN A GENERALISED EPIDEMIC; CONDOM USE, VIOLENCE, AND SEXUALLY TRANSMITTED INFECTIONS AMONG FEMALE SEX WORKERS IN DAR ES SALAAM, TANZANIA

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