Abstract O1-S04.05 Table 1 Prevalence and incidence data for East London students. (Note: Blood testing was declined by 2 students at 42 months and 4 youth and 54 months. Data were missing on vaginal intercourse for a further 3 students at 54 months)

Gender	No. of evaluable youth	Mean age in years (SD)	Statistic Prevalence	*Neisseria gonorrhoeae* % (95% CI)	*Chlamydia trachomatis* % (95% CI)	*Trichomonas vaginalis* % (95% CI)	No. of evaluable youth	Herpes simplex type 2 % (95% CI)
Male	446	16.1 (1.25)	42 month prevalence	0.90 (0.26 to 2.37)	3.14 (1.83 to 5.25)	0.90 (0.26 to 2.37)	444	3.15 (1.84 to 5.27)
Female	513	15.5 (1.17)	42 month prevalence	8.77 (6.60 to 11.56)	17.93 (14.85 to 21.50)	7.21 (5.26 to 9.81)	513	10.33 (7.97 to 13.28)
Male	457	17.1 (1.27)	54 month prevalence	1.75 (0.83 to 3.48)	7.22 (5.16 to 9.99)	0.00 (0.00 to 1.00)	455	5.05 (3.36 to 7.50)
Female	520	16.5 (1.14)	54 month prevalence	7.69 (5.68 to 10.33)	18.27 (15.18 to 21.83)	4.04 (2.62 to 6.13)	518	15.64 (12.75 to 19.03)
			Incidence	new case per 1000 (95% CI)	new case per 1000 (95% CI)	new case per 1000 (95% CI)		new case per 1000 (95% CI)
Male	434	17.1 (1.24)	Overall incidence at 54 months	18.4 (8.7 to 36.6)	73.7 (52.4 to 102.5)	0.0 (0.0 to 10.6)	419	28.6 (15.9 to 49.9)
Female	500	16.5 (1.13)	Overall incidence at 54 months	76.0 (55.6 to 102.8)	184.0 (152.4 to 220.4)	40.0 (25.7 to 61.3)	450	64.4 (44.9 to 91.3)
Male	334	17.2 (1.22)	Incidence at 54 months among those reporting previous vaginal intercourse	18.0 (7.3 to 39.6)	77.8 (53.3 to 112.0)	0.0 (0.0 to 13.7)	322	18.6 (7.6 to 41.0)
Female	331	16.6 (1.06)	Incidence at 54 months among those reporting previous vaginal intercourse	108.8 (79.3 to 147.2)	244.7 (201.4 to 293.9)	54.4 (34.2 to 84.8)	296	87.8 (60.2 to 126.0)

curable STIs were treated. Females had a higher prevalence of all pathogens at both visits ($p<0.001$ for all, Abstract O1-S04.05 table 1). Overall annual incidence rates (per 1,000, 95% CI), based on results of the 934 (96%) students who attended the 42M/54M visits (934 urine, 931 serology tests), were substantially higher in females compared to males [males: GC 18.4 (8.7–36.6), CT 73.7 (52.4–102.5), TV 0.0 (0.0–10.6), HSV-2 28.6 (15.9–59.9); females: GC 76.0 (55.6–102.8), CT 184.0 (152.7–220.4), TV 40.0 (25.7–61.3), HSV-2 64.4 (44.9–91.3)]. Incidence rates were also calculated for students (311 females, 66%; 334 males, 77%) who reported ever having had vaginal intercourse (Abstract O1-S04.05 table 1). Compared to overall rates, females had significantly higher rates for each STI (GC/CT, $p<0.001$; TV, $p=0.027$; HSV-2, $p=0.015$); this was not the case for males.

Conclusions This community-based screening study demonstrates an extremely high STI burden among youth in the Eastern Cape Province of South Africa.

O1-S04.06 PELVIC INFLAMMATORY DISEASE OCCURRING BETWEEN THE TIME OF TESTING AND TREATMENT FOR GONORRHOEA AND CHLAMYDIA

doi:10.1136/sextrans-2011-050109.24

[1]W Risser, [2]J Risser. *[1]University of Texas, Medical School, Houston, USA; [2]University of Texas, School of Public Health, USA*

Background We conducted a prospective study to confirm our impression that incarcerated adolescents sometimes developed pelvic inflammatory disease (PID) during the brief interval between testing and treatment for gonorrhoeal and chlamydial cervicitis.

Methods We performed the study at the Harris County Juvenile Detention Center, Texas, where PID in females is relatively common and where the prevalence of gonorrhoea and chlamydia infections is high. At the time of their mandated medical assessment, all incarcerated adolescents submitted first-catch urine samples for chlamydia and gonorrhoea testing. We used Gen-Probe NAAT assays. If at the time of testing a patient had symptoms suggestive of PID, we performed a bimanual pelvic examination and treated those who met the criteria for PID. For the diagnosis of PID, we used the criteria of the US Centers for Disease Control and Prevention: the presence of adnexal or cervical motion or uterine tenderness. The pelvic examinations were performed by one of three experienced physicians. For the patients who did not have PID at the time of testing, we re-assessed them when we learnt that their urine test was positive. The tests were run in batches by the city health department, so that a variable length of time elapsed between the day of testing and the day that we received test results. At re-assessment, patients received a PID diagnosis if they had lower abdominal pain and met the PID diagnostic criteria on bimanual pelvic examination.

Results We evaluated 99 subjects between 29 March 2010 and 27 December 2010. Their mean age was 15.8 (SD 1.1) years. Their race/ethnicity was 43% black, 32% Hispanic, and 25% white; 74% had chlamydia, 14% gonorrhoea, and 12% both. The interval between testing and treatment ranged from 2 to 17 days; the mean (SD) was 7.5 (2.9) days. During this interval, 13 of 99 (13%) developed lower abdominal pain and had bimanual pelvic examination findings that supported the diagnosis of PID. Of these 13, 10 (77%) had chlamydia, 2 (15%) had gonorrhoea, and 1 (8%) had both infections. Time from initial urine testing to treatment for PID ranged from 7 to 15 days.

Conclusion In incarcerated adolescents infected with gonorrhoea and/or chlamydia, a surprisingly large proportion (13%) developed PID during the brief period between testing and treatment.

Epidemiology oral session 5: Vaginal infections

O1-S05.01 THE EPIDEMIOLOGICAL ASSOCIATIONS OF BV CANDIDATE BACTERIA IN SEXUALLY EXPERIENCED AND INEXPERIENCED WOMEN WITH BV AND NORMAL VAGINAL FLORA

doi:10.1136/sextrans-2011-050109.25

[1]C Bradshaw, [1]K Fethers, [2]F Fowkes, [3]J Twin, [1]C Fairley, [3]S Garland, [1]G Fehler, [1]A Morton, [2]J Hocking, [3]S Tabrizi. *[1]Melbourne Sexual Health Centre, Melbourne, Australia; [2]University of Melbourne, Australia; [3]Royal Women's Hospital, Australia*

Background Several bacterial candidate organisms (COs) have recently been shown to be highly specific for BV. The epidemiological profiles for these COs are unknown and no studies have examined COs in young sexually-inexperienced women, whether these COs are sexually-transmitted, or how they relate to specific sexual activities.

Methods This study incorporates two study populations: The Female University Student Study which recruited women aged 17–21 years attending the University of Melbourne, and a sexually-experienced clinic population from Melbourne Sexual Health Centre. Participants completed a questionnaire addressing demographics and detailed sexual practices. Gram-stained vaginal smears

Abstract O1-S05.01 Table 1 Associations between prevalence of BV candidate organisms and lifetime sexual partners

Candidate organism	*Megasphaera spp.* detected (prevalence %)	*Sneathia spp.* prevalence detected (prevalence %)	*Leptotrichia spp.* detected (prevalence %)	*L crispatus* prevalence detected (prevalence %)	*G vaginalis* prevalence detected (prevalence %)	BVAB1 prevalence detected (prevalence %)	BVAB2 prevalence detected (prevalence %)	BVAB3 prevalence detected (prevalence %)	*A vaginae* prevalence detected (prevalence %)
Women with normal flora									
Lifetime sexual partners									
0	2/79 (3)	3/79 (4)	3/79 (4)	45/79 (57)	24/79 (30)	0/79	0/79 (0)	0/79	53/79 (67)
1–10	1/82 (1)	4/82 (5)	3/82 (4)	60/82 (73)	41/82 (50)	0/82	6/82 (7)	0/82	56/82 (68)
>10	6/72 (8)	10/72 (14)	12/72 (17)	59/72 (82)	49/72 (68)	0/72	6/72 (8)	2/72 (3)	34/72 (48)
p for trend	0.1	0.03	0.006	0.001	<0.001	Undefined	0.2	0.2	0.02
Women with BV									
Lifetime sexual partners									
0	1/3 (33)	1/3 (33)	1/3 (33)	1/3 (33)	3/3 (100)	0/3 (0)	0/3 (0)	0/3 (0)	2/3 (67)
1-10	12/33 (36)	17/33 (52)	16/33 (49)	11/33 (33)	31/33 (94)	1/33 (3)	18/33 (55)	4/33 (12)	33/33 (100)
>10	12/69 (17)	60/69 (87)	59/69 (86)	35/69 (51)	69/69 (100)	6/69 (9)	54/69 (78)	13/69 (19)	67/67 (100)
p for trend	0.07	<0.001	<0.001	0.2	0.3	0.3	0.004	0.3	0.04

were scored by the Nugent method. Three-hundred-and-thirty-nine samples from women with normal flora and BV were selected for analysis using quantitative PCR assays (qPCR) targeting the specific 16S rRNA gene sequences of eight published COs (*G vaginalis*, *A vaginae*, *Megasphaera spp*., *Sneathia spp*., BVAB1, BVAB2, BVAB3, and *Leptotrichia spp*.) and *L crispatus*. Detection of COs and *L crispatus* and their total bacterial loads were compared between women with BV and normal flora. The associations between prevalence of COs and specific sexual behavioural practices were examined by univariate and multivariate analysis.

Results Analysis found all COs were strongly associated with BV compared with normal flora and *L crispatus* was negatively associated. *G vaginalis* and *A vaginae* were relatively common in sexually inexperienced women: however other COs were absent in a truly virginal population. When women with normal flora and BV were analysed separately, *Sneathia spp*., BVAB1, BVAB2, BVAB3, *Leptotrichia spp*. and *G vaginalis* all demonstrated a progressive increase in prevalence with increasing sexual experienced and increasing numbers of vaginal sexual partners see Abstract O1-S05.01 table 1. *Megasphaera spp*. however differed from other COs, with a higher prevalence being strongly associated with increasing oral sex frequency and oral sex partner number.

Conclusions These data provide compelling evidence for sexual transmission of several COs—with absence of COs in virginal women and increasing prevalence with increasing sexual exposure. Interestingly the COs *Sneathia spp*., BVAB1, BVAB2, BVAB3, *Leptotrichia spp*. and *G vaginalis* are significantly associated with vaginal sex while the epidemiological association of *Megasphaera spp*. differed from the other COs being significantly associated with oral sex.

O1-S05.02 BIOLOGICAL EVIDENCE OF SEMEN EXPOSURE IS ASSOCIATED WITH INCIDENT *BACTERIAL VAGINOSIS*

doi:10.1136/sextrans-2011-050109.26

[1]M Gallo, [1]L Warner, [1]C King, [2]J Sobel, [3]A Rompalo, [4]S Cu-Uvin, [5]R Klein, [6]E Schoenbaum, [1]D Jamieson. *[1]Centers for Disease Control and Prevention, Atlanta, USA; [2]Wayne State University School of Medicine, Detroit, USA; [3]Johns Hopkins University School of Medicine, Baltimore, USA; [4]Brown University School of Medicine, Providence, USA; [5]Mount Sinai School of Medicine, New York, USA; [6]Albert Einstein College of Medicine, USA*

Objectives (1) To identify correlates of incident *Bacterial vaginosis* (BV) among high-risk women and (2) to identify predictors of discordance between self-reported lack of semen exposure in the past 6 months and the detection of spermatozoa on Gram stain, which provides biological evidence of recent exposure.

Methods Analyses were based on among 871 HIV-infected and 439 HIV-uninfected women participating in HIV Epidemiology Research Study (HERS) which was conducted in 4 sites in the US Participants completed study visits conducted at baseline and at 6-month intervals thereafter. We conducted both cohort and case-crossover analyses, stratified by HIV infection status, to evaluate potential correlates of incident BV. We also used logistic regression to identify predictors of discordance between self-reported lack of exposure to semen and the detection of spermatozoa on Gram stain.

Results BV incidence was 21% among HIV-infected women and 19% among HIV-uninfected women. We found fewer correlates of incident BV when assessed with a case-crossover design than with a cohort design. Reporting frequent coitus (regardless of consistency of condom use) was correlated with incident BV in the cohort analyses but not in the case-crossover analyses. The sole correlate that emerged in both the cohort and case-crossover analyses among HIV-infected and -uninfected women was the detection of spermatozoa on Gram stain. Seven factors were associated with discordance between self-reported semen exposure and spermatozoa detection in the multivariable analysis. Discordance differed by study site and race/ethnicity and was more common among younger women. The following infections or conditions also were predictive of discordance: HIV (adjusted OR [aOR], 2.8; 95% CI, 1.7% to 4.6%), BV (aOR, 1.9; 95% CI, 1.5% to 2.5%), and human papillomavirus (aOR, 1.3; 95% CI, 1.0% to 1.8%). Finally, reporting current injection drug use (aOR, 0.6; 95% CI, 0.4% to 0.9%) was inversely related to discordance.

Conclusions The inconsistent association between condom use and BV found in prior studies could be the result of participant reporting bias. The present study found evidence of a relationship between semen exposure and incident BV. Also, given the number and range of correlates of discordance between self-reported and biological evidence of semen exposure, inaccuracies in the reporting of sexual behaviours cannot be assumed to be distributed randomly across a study population.

O1-S05.03 BEHAVIOURAL FACTORS ASSOCIATED WITH *BACTERIAL VAGINOSIS* (BV) IN WOMEN WHO HAVE SEX WITH WOMEN (WSW): THE WOMEN ON WOMEN'S (WOW) HEALTH STUDY

doi:10.1136/sextrans-2011-050109.27

[1]C Bradshaw, [2]J Bilardi, [2]S Walker, [2]L Vodstrcil, [3]S Garland, [2]J Hocking, [4]M Chen, [4]S Peterson, [4]G Fehler, [2]C Fairley. *[1]Melbourne Sexual Health Centre, University of Melbourne, Melbourne, Australia; [2]University of Melbourne, Melbourne, Australia; [3]Royal Womens Hospital, Australia; [4]Melbourne sexual health centre, Austria*

Background We are conducting a national 2 year cohort study in 400 Australian WSW to determine the behavioural and microbiological