vulnerabilities related to age, socioeconomic status, life course factors, and engagement in high risk behaviour such as sex trade. We present a risk factor analysis for those with single and multiple STIs, using the Enhanced Surveillance of Canadian Street Youth (E-SYS) data.

**Methods** E-SYS is a cross-sectional surveillance system of street-involved youth (15–24 years). Participants from seven urban centres completed an interviewer-administered questionnaire and were tested for multiple sexually transmitted and blood-borne infections. For this analysis, data were restricted to five infections (HIV, chlamydia, gonorrhoea, syphilis and HSV-2). Data from three cycles (2001–2006) were analysed to determine total number of infections per participant using an iterative tracker. Participants who indicated previous participation were excluded from the analysis to avoid double-representation.

**Results** Of those who provided biological specimens (n = 3823), 17.0% tested positive for one infection and 3.4% tested positive for two or more infections (Abstract O1-S04.03 table 1). Over half (15/28) of HIV-positive individuals were multiply-infected. Risk factors for multiple infections included older age (p = 0.0449), being Aboriginal (p = 0.0061; particularly females), being HIV infected (p < 0.0001), having a previous history of an STI (p = 0.0144), pregnancy (p = 0.0079), and reporting prostitution as the primary source of income (p = 0.0028).

**Abstract O1-S04.03 Table 1** Single and multiple STI in the enhanced street youth surveillance population

<table>
<thead>
<tr>
<th>Chlamydia</th>
<th>Gonorrhoea</th>
<th>Syphilis</th>
<th>HSV-2</th>
<th>HIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>208 (7.98%)</td>
<td>42 (1.26%)</td>
<td>17 (2.35%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>210 (0.70%)</td>
<td>20 (0.07%)</td>
<td>3 (0.09%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>72 (2.78%)</td>
<td>19 (0.74%)</td>
<td>14 (0.14%)</td>
<td>348 (12.20%)</td>
<td></td>
</tr>
<tr>
<td>41 (1.50%)</td>
<td>0 (0.00%)</td>
<td>0 (0.00%)</td>
<td>14 (0.50%)</td>
<td>13 (0.44%)</td>
</tr>
</tbody>
</table>

*Same-infection crosses represent single infections. % based on individuals tested for both infections. An individual may be counted more than once if they have more than two infections.

**Conclusions** The prevalence of certain STI co-infections (eg, chlamydia and gonorrhoea) is high among street-involved youth and within this population, certain sub-groups may be more vulnerable to these co-infections. Continued efforts are required to promote comprehensive STI testing among street-involved youth and to raise awareness of the potential for multiple infections.

**O1-S04.05** INCIDENCE AND PREVALENCE OF SEXUALLY TRANSMITTED INFECTIONS AMONG SCHOOL STUDENTS IN THE EASTERN CAPE, SOUTH AFRICA

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**Background** Although STIs are an important co-factor for HIV acquisition, few community-based STI prevalence/incidence data exist for youth in South Africa.

**Methods** School students (n = 1057), enrolled in a cluster-randomised intervention trial in the Eastern Cape, were tested for STIs at the 42 (42M) and 54 (54M) month follow-up visits. Students filled in questionnaires, provided blood for herpes simplex type 2 (HSV-2) serology (HerpeSelect IgG, Focus Diagnostics) and urine to test for Neisseria gonorrhoeae (NG), Chlamydia trachomatis (CT) and Trichomonas vaginalis (TV) (Aptima Combo 2 and Aptima TV, GenProbe). Positive NG/CT/TV results were confirmed by other assays (Aptima NG, Aptima CT, Gen-Probe; TV vaginalis Real-TM, Sacace Biotechnologies). Students with NG/CT/TV received treatment and partner follow-up; those with HSV-2 infection were counselled. STI prevalence was determined by gender at each visit; overall incidence was estimated using results for all students attending both visits and also for a subgroup who reported ever having had vaginal intercourse. Descriptive statistical analysis was performed and associations investigated with the χ² test.

**Results** 959 (91%) and 977 (92%) students tested for STIs at 42M and 54M, respectively. The students’ mean age (SD) was 15.8 (1.25) years at 42M and 16.3 (1.25) years at 54M. At 42M, 149 (15.5%) had curable STIs and 67 (7.0%) had HSV-2 infection. At 54M, 154 (15.8%) had curable STIs and 104 (10.7%) had HSV-2 infection. All
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)

<table>
<thead>
<tr>
<th>Gender</th>
<th>No. of evaluable youth</th>
<th>Mean age in years (SD)</th>
<th>Neisseria gonorrhoeae % (95% CI)</th>
<th>Chlamydia trachomatis % (95% CI)</th>
<th>Trichomonas vaginalis % (95% CI)</th>
<th>Incidence new case per 1000 (95% CI)</th>
<th>No. of evaluable youth</th>
<th>Horaparaxia simplex type 2 % (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>446</td>
<td>42 month prevalence</td>
<td>0.90 (0.26 to 2.37)</td>
<td>3.14 (1.83 to 5.25)</td>
<td>0.90 (0.26 to 2.37)</td>
<td>444</td>
<td>3.15 (1.84 to 5.27)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>513</td>
<td>42 month prevalence</td>
<td>8.77 (6.60 to 11.56)</td>
<td>17.93 (14.85 to 21.50)</td>
<td>7.21 (5.26 to 9.81)</td>
<td>513</td>
<td>10.33 (7.97 to 13.28)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>457</td>
<td>54 month prevalence</td>
<td>1.75 (0.83 to 3.48)</td>
<td>7.22 (5.16 to 9.99)</td>
<td>0.00 (0.00 to 1.00)</td>
<td>455</td>
<td>5.05 (3.36 to 7.50)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>520</td>
<td>54 month prevalence</td>
<td>7.68 (5.68 to 10.33)</td>
<td>18.27 (15.18 to 21.83)</td>
<td>4.04 (2.62 to 6.13)</td>
<td>518</td>
<td>15.64 (12.75 to 19.03)</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusions**
This community-based screening study demonstrates 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 (8.7–36.3), CT 75.7 (52.4–102.5), TV 0.0 (0.0–10.6), HSV-2 28.6 (15.9–59.9); females: GC 75.6 (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 significantly higher for each STI (GC/CT, p<0.001; TV, p =0.027; HSV-2, p =0.015); this was not the case for males.

**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 (15%) 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

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**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 were 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 (15%) developed PID during the brief period between testing and treatment.