



Abstract O1-S04.01 Figure 1

adolescent HIV infection and (i) maternal mortality, (ii) adolescent sexual behaviour, and (iii) chronic illness.

Results There were 990 males and 972 females aged 15 to 17 years included in the cohort. Mothers of HIV positive adolescent males were more likely to be deceased than those of HIV negative males (RR 2.72, $p < 0.001$). Mothers of HIV positive females were not more likely to be deceased, but were more likely to be HIV positive if still alive (RR 3.68, $p < 0.001$). Among males there was no association between having had sex and HIV status. Sexually active females were more likely to be HIV positive (RR 2.44, $p = 0.042$). During the period that adolescent prevalence increased, the proportion of adolescent males who reported having had sex reduced from 14% to 8% ($p < 0.001$), and did not change in females. HIV positive adolescents were more likely to report recurring sickness or chronic illness, indicative of late-stage HIV infection.

Conclusions Increasing HIV prevalence in adolescent males cannot be explained by a rebound in sexual risk behaviour and is likely attributable to long-term survivors of perinatal HIV transmission. Among females, both perinatal and sexual transmission account for adolescent HIV infections. These findings question the interpretation of HIV prevalence in young people as an indicator of recent trends in HIV incidence. They suggest an urgent need to prevent onward HIV transmissions by perinatally infected adolescents and the expansion of HIV testing and treatment to include young people.

O1-S04.02 REGIONAL HIV SURVEILLANCE OF YOUTH MSM THROUGH MULTILEVEL ANALYSIS OF RDS STUDIES IN LATIN AMERICA

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¹J O Jacobson, ¹M Alonso-Gonzalez, ²D Ramachandran, ³G Paz-Bailey, ⁴I Balan, ⁵S Morales-Miranda, ³M E Guardado, ¹R Salamanca-Kacic, ⁶A I Nieto-Gomez, ¹M Maddaleno. ¹Pan American Health Organization, Bogota, Colombia; ²Johns Hopkins Bloomberg School of Public Health, Baltimore, USA; ³Tephinet Inc., Atlanta Georgia and Del Valle University of Guatemala, Guatemala City, Guatemala; ⁴Columbia University, New York, USA; ⁵Del Valle University of Guatemala, Guatemala; ⁶Ministerio de Salud de El Salvador, San Salvador, El Salvador

Background Men who have sex with men (MSM) are the population most affected by HIV in Latin America (LA). Youth MSM (YMSM) are of particular interest given potentially greater levels of risk behaviour and as a barometer of recent epidemic dynamics. Yet single MSM studies lack sufficient sample size to characterise YMSM so that HIV prevalence and variation among YMSM within LA is unknown.

Methods We developed a multilevel statistical framework to borrow strength across recent (2006–2009) respondent-driven sampling

(RDS) studies with similar survey methodologies to permit characterisation of HIV prevalence and risk factors among YMSM in LA and comparisons across cities. Data from participants aged 18–24 years tested for HIV in MSM studies in nine high-population cities in Argentina, Bolivia, Costa Rica, El Salvador and Honduras (N=1410) were pooled. Weights incorporating personal network and population sizes adjusted for selection probability. Logistic, multi-level models identified correlates of HIV infection, including city-level fixed effects and accounted for intraclass correlation within recruitment chains.

Results HIV prevalence was 4.6% (95% CI: 3.2% to 6.5%) in the pooled sample and varied significantly across cities from 2.7% in Buenos Aires, Argentina to 9.3% in San Pedro Sula, Honduras. Samples varied ($p < 0.05$) in terms of completion of secondary education (69.6%–100.0%), gay (range 2.5%–77.5%) and bisexual self-identity (18.8%–97.6%), past-year drug use (5.9%–64.8%), condom use at last anal sex (26.6%–72.7%) and other risk behaviours, knowledge of HIV prevention and transmission (26.4%–71.9%) and lifetime HIV testing (28.7%–59.2%). In multivariate analysis, syphilis infection (adjusted OR [AOR]=2.5), aged 23–24 years (vs 18–22) (AOR=2.2), past-year crack/cocaine use (AOR=2.2) and bisexual self-identity (AOR=0.5) were associated with HIV infection. Significant city effects for Salvador, El Salvador and Santa Cruz, Bolivia persisted net of individual-level differences.

Conclusions Formal comparisons of HIV burden and risk differences among cities can be achieved through multilevel analysis. HIV prevalence, drug and sexual risk behaviours, and low HIV testing among YMSM in LA are considerable and vary substantially within the region. The need for prevention among YMSM in LA is urgent and must address substance abuse, STI and be tailored to local context. Prevention should target younger YMSM as probability of infection rises rapidly with age.

O1-S04.03 CO-INFECTION WITH SEXUALLY TRANSMITTED INFECTIONS AMONG CANADIAN STREET-INVOLVED YOUTH 2001–2006

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¹C V Atwood, ¹L Fang, ¹A Demers, ²J Gratrix, ³M Rossi, ⁴D Taylor, ⁵J Wright, ¹T Wong, ¹G Jayaraman, ⁶For the Enhanced Street Youth Surveillance Team. ¹Public Health Agency of Canada, Ottawa, Canada; ²Alberta Health Services Edmonton, Canada; ³Sick Kids Hospital, University of Toronto, Canada; ⁴BCCDC Vancouver, Canada; ⁵Public Health Observatory, Public Health Services, Saskatoon Health Region Saskatoon, Canada; ⁶Enhanced Street Youth Surveillance Team, Canada

Background Canadian street-involved youth are at greater risk for sexually transmitted infections (STIs), due to their increased

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 of 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

	Chlamydia	Gonorrhoea	Syphilis	HSV-2	HIV
Chlamydia	268(7.98%)				
Gonorrhoea	42(1.26%)	17(2.35%)			
Syphilis	2(0.07%)	2(0.07%)	3(0.09%)		
HSV2	72(2.78%)	19(0.74%)	4(0.14%)	348(12.20%)	
HIV	4(0.15%)	0(0.00%)	1(0.03%)	14(0.50%)	13(0.44%)
Tested overall	3357	3339	3190	2852	2951
Total # of individuals infected	375	69	10	442	28
Prevalence overall	11.17%	2.07%	0.56%	15.50%	0.95%

*Same-infection crosses represent single infections.

%s 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-S04.04 PREDICTORS OF REPEAT CHLAMYDIA TRACHOMATIS AND/OR NEISSERIA GONORRHOEAE INFECTIONS AMONG AFRICAN-AMERICAN ADOLESCENT FEMALES

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A Swartzendruber, R DiClemente, J Sales, J L Brown, E Rose. *Emory University Rollins School of Public Health, Atlanta, USA*

Background Young African-American females have the highest rates of Chlamydia (CT) and gonorrhoea (GC) in the US. Few studies have explored predictors of repeat STDs among this population. The objective was to identify predictors of repeat CT and/or GC infections among African-American adolescent females positive for at least one of these STDs at baseline.

Methods Sociodemographic, psychosocial and sexual behaviour data were collected via ACASI at baseline and every 6 months for 2 years from 701 African-American females (15–19 years) enrolled in an

HIV prevention trial. Vaginal swabs were self-collected at each visit and assayed for CT and GC using DNA amplification. Participants with a positive test result received directly observable single-dose antimicrobial treatment and risk-reduction counselling. Repeat infection was defined as a positive test result following a negative result or documented treatment. Among those who tested positive for CT and/or GC at baseline, bivariate and multivariable analyses compared study variables for those who did vs did not have a repeat infection during the 2-year follow-up.

Results Of 615 (88%) participants with ≥ 1 follow-up test result, 122 (20%) had a positive CT and/or GC test result at baseline; 49 (40% of baseline positives and 8% of total) had a repeat infection during the study period. Of those with a repeat infection, 30 (61%) were positive at only one follow-up visit, 18 (37%) at two and 1 (2%) at three follow-up visits. In bivariate analyses, relative to those positive at baseline only, participants with repeat infection were less likely to have a boyfriend (71 vs 83%, $p=0.043$) and see themselves marrying their current boyfriend (57.1 vs 76.2%, $p=0.05$) and more likely to have had sex with a man who had sex with other men (8.2 vs 0%, $p=0.013$). Participants with repeat infection had higher mean impulsivity scores ($p=0.027$). Controlling for age and treatment assignment, greater impulsivity (AOR: 1.1, $p=0.018$) was associated with increased likelihood of a repeat infection and having a boyfriend (AOR: 0.21, $p=0.006$) with decreased likelihood of a repeat infection.

Conclusions Repeat CT and/or GC infections are common among African-American adolescent females. Among young African-American females who test positive for CT and/or GC, tailored interventions for more impulsive adolescents and those without a boyfriend may help prevent repeat infections.

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

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¹F Radebe, ²J Jemmot III, ³A Klopper, ²L Jemmot, ⁴A O'Leary, ⁵Z Ngwane, ²C Carty, ⁶J Tyler, ¹V Maseko, ¹D Lewis. ¹National Institute for Communicable Diseases, National Health Laboratory Service, Sandringham, South Africa; ²University of Pennsylvania, Philadelphia, USA; ³Private General Practice East London, South Africa; ⁴Centers for Disease Control and Prevention, Atlanta, USA; ⁵Haverford College, Haverford, USA; ⁶University of Fort Hare, Alice, South Africa

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, GenProbe; *T 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 χ^2 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 16.8 (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