Background Cohort and cross-sectional studies have shown syphilis is associated with risk for HIV infection. However, population-based estimates of the actual risk for HIV following syphilis infections are lacking.
Methods In New York City, HIV and STD surveillance registries are separately maintained. Cases reported to these registries with diagnoses from 2000-June 2010 were matched using a deterministic algorithm. We measured HIV incidence among men following primary or secondary syphilis diagnoses. We calculated time at risk for HIV among men diagnosed with HIV ≥ 60 days after syphilis diagnosis; men without reported HIV were presumed uninfected and censored on 3/31/2011.
Results Of 2,805 men with syphilis who contributed 11,714 person-years of follow-up, 423 (15.1%) subsequently acquired HIV; annual incidence was 3.61% (95% CI: 3.27%, 3.97%). Median time to HIV diagnosis was 582 days (range 60–3150). HIV incidence was highest among men who have sex with men (MSM) (5.56%, 95% CI: 5.02%–6.13%), relatively uniform across race/ethnicity and year of syphilis diagnosis, and decreased with increasing age at syphilis diagnosis. HIV incidence was higher among males with secondary compared with primary syphilis (4.10% vs. 2.64%, p < 0.0001). HIV incidence among males with syphilis who were diagnosed with another bacterial STD before HIV (14% of cases) was over double the incidence among those who were concurrently diagnosed (7.89% vs. 3.44%, p = 0.002) or reported only with syphilis (7.89% vs. 2.89%, p < 0.0001) during the analytic period.
Conclusions On a population level, one in 20 MSM with syphilis are diagnosed with HIV within a year; highly frequent HIV testing and HIV pre-exposure prophylaxis should be considered for HIV-negative syphilis cases. Secondary syphilis suggests untreated primary lesions; the higher HIV incidence among these cases underscores the importance of appropriate STD/HIV screening and early syphilis detection. Registry matching/integration permits identification of high-risk individuals, such as men repeatedly acquiring STD, for targeting prevention activities.

011.5 RISKS FOR SEXUALLY TRANSMITTED INFECTIONS (STIS), HIV, AND PREGNANCY AMONG WOMEN WORKING IN ENTERTAINMENT ESTABLISHMENTS IN CAMBODIA

doi:10.1136/sextrans-2013-051184.0147

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Background Since the 1990s, Cambodia successfully reduced HIV and STI prevalence among female sex workers. In 2008, brothels were outlawed, and non-brothel Entertainment Establishments (EEs) increased. Some women working in EEs exchange sex for gifts or money. We examined associations between behavioural risks and STIs, HIV and pregnancy among Cambodian Female Entertainment Workers (FEWs).
Methods In 2011, a stratified multi-stage cluster survey of 2,564 FEWs was conducted in karaoke establishments, beer halls, and former brothels. Participants consented to private interviews, blood collection, and self-administered vaginal swabs for gonorrhoea and chlamydia. Analyses were weighted and controlled for the complex design of the survey. Logistic regression models were used to examine potential risk factors of STIs, HIV and pregnancy.
Results Transactional sex in the last year was reported by 41.1% of FEWs. Chlamydia (18.9%), gonorrhoea (5.3%), and active syphilis (0.4%) were associated with younger age (p < 0.0001). HIV (2.6%) and pregnancies (n = 1194) were more likely among older women (p < 0.0001). Heavy drinking was associated with gonorrhoea (odds ratio [OR] = 2.5, 95% CI 1.1–5.4), while drug use was associated with any STI (p = 0.0062) and HIV (p = 0.0005). Always using condoms varied by partner type (clients [74.0%], boyfriends [31.2%], and husbands [9.8%]) and was negatively associated with pregnancy only. Working in a former brothel (OR = 2.5, 95% CI 1.4–4.6) and having > 7 vs. ≤ 7 clients per week (OR = 3.8, 95% CI 1.8–7.7) was associated with HIV. Among FEWs, 36.8% had clients plus a husband and/or boyfriend. Those with both a boyfriend and client had the highest odds of any STI (OR = 3.8, 95% CI 2.2–6.7).
Conclusion Cambodian FEWs are a heterogeneous group with varying risk behaviours. STIs and HIV appear to be concentrated in distinct subpopulations, but sexual partner relationships contribute to the complex transmission dynamics. Defining those most at risk will help focus national prevention and case-finding programmes.

011.6 MIGRATION AND HIV RISK IN RAKAI YOUTH, 2000–2010

doi:10.1136/sextrans-2013-051184.0148

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Background Migration is common among youth in Africa and is connected to life transitions. Migration has also long been associated with increased risk of being HIV-infected. Although this association has been observed in multiple studies, the temporal order between infection and migration is often unclear. This investigation uses unique cohort data from Rakai, Uganda to test whether recent in-migration places youth at a higher risk of HIV acquisition.
Methods We used data from the Rakai Community Cohort Study, 1999–2011. Respondents included were aged 15–24, sexually experienced and initially HIV negative (n = 9365). Migration and HIV status were assessed at each annual survey round. Poisson regression with robust standard errors was used to estimate age-adjusted incidence rate ratios (aIRR) of HIV acquisition among in-migrants versus non-migrants, by geographic origin and reason for migration. Additional adjustment for characteristics assessed at follow-up was explored.
Results In young men, HIV incidence in recent in-migrants (14.3 per 1000 person-years (py)) was 2 times greater than non-migrants (6.6 per 1000 py) (aIRR = 2.04; 95% confidence interval (CI): 1.07–3.92). In young women, incidence among in-migrants (12.6 per 1000 py) was similar to non-migrants (11.5 per 1000 py) (aIRR = 1.07; CI: 0.74–1.55). Associations were not affected by geographic origin. Men who had migrated for marriage were at particularly high risk (141 per 1000 py) compared to non-migrants (aIRR = 17.16; CI: 3.15–93.35). However, this was uncommon (< 1% of py) and only in men aged > 19. Women who had migrated for work were at increased risk (30.3 per 1000 py) compared to non-migrants (aIRR = 2.59; CI: 1.41–4.76). IRRs were relatively unchanged with adjustment for marital status, number of partners in last 12 months or sexual concurrency.
Conclusion Recent in-migration is associated with increased HIV risk in young Ugandan men. Among young women, the increase in HIV risk may be specific to migration for work.

0.12 - Social determinants and structural interventions

012.1 USING SOCIAL DETERMINANTS TO PREDICT *NEISSERIA GONORRHOEAE* INFECTION RISK AT THE CENSUS TRACT-LEVEL: FINDINGS FROM THE STD SURVEILLANCE NETWORK (SSUN), UNITED STATES

doi:10.1136/sextrans-2013-051184.0149