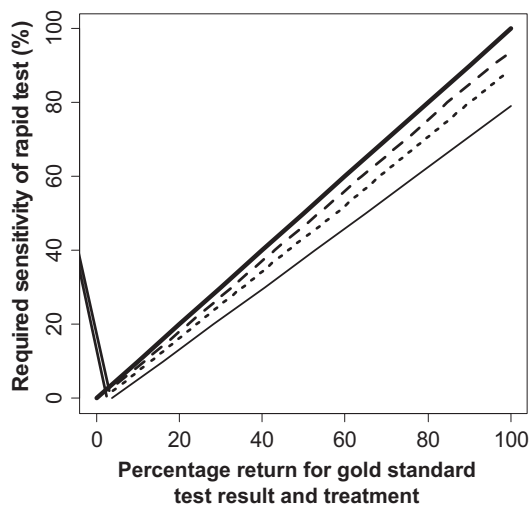testing and treatment for FSW at different annual coverage levels for 3 years, in comparison to using a high sensitivity lab-based test. Because of evidence for Tp rebounding following treatment, the impact of the intervention after it has ended was evaluated.

Results The model projected the 3-year impact of annually screening 40% or 80% of FSWs with a rapid Tp test (sensitivity 87%) would result in a 46% (43—54%) or 69% (66—77%) relative reduction in Tp prevalence in this setting, respectively. The corresponding decrease in Tp prevalence among clients was estimated to be 2 to 3-fold less but more infections were averted among them. The Asbtract P1-S2.17 figure 1 shows that for a lab-based testing strategy to achieve the same impact as using a rapid test with 87% sensitivity would require a return rate of 92% or 98% if the delay in treatment was 1 or 2 weeks, respectively. After screening ceases, the model projects the percentage of infections averted would continue increasing for a number of years in this setting.

Asbtract P1-S2.17 Figure 1   Required return rate for lab-based gold standard test to have same impact as a rapid test for different delays in treatment. Different lines are for different delay periods between testing and treatment for the lab test - thick line, 0 weeks; dashed line, 1 week; dotted line, 2 weeks; narrow line, 4 weeks.

Conclusions In a moderate Tp prevalence setting, a rapid test point of care intervention could have considerable impact on Tp transmission. Unless there is very low sensitivity for the rapid test and a very high return rate for the lab-based method of screening, the rapid test intervention will provide a greater relative reduction in Tp prevalence.

P1-S2.18

SYPHILIS PREVALENCE AND RELATED RISK FACTORS AMONG FEMALE WORKERS AT SOCIAL VENUES IN LIUZHOU, CHINA

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Background In the context of rapid urbanisation and economic growth in China, places where social mixing intersects with commercial activities could play an important role in the formation of new partnerships and spread of sexually transmitted infections (STIs) including HIV. People who work at such venues may be at higher risk of STIs. A study was conducted from October 2009 through February 2010 in Liuzhou, China to estimate the prevalence of syphilis and related risk factors among females working at places where people go to meet new sexual partners.

Methods Using a two-stage venue-based sampling method called PLACE, data were collected through interviews with 656 females nested within 36 venues with a minimum of five females per venue. A venue was classified as a "sex venue" if the manager or at least one of the females reported solicitation of commercial sex at the venue in the past 4 weeks. All respondents were screened for syphilis onsite using a rapid treponemal-specific test which represents lifetime syphilis infection acquired at anytime. Multi-level regression modelling was used to examine individual and venue correlates of syphilis infection and to account for clustering.

Results 23 of the 36 venues were classified as sex venues. Among all females, those working at sex venues and at venues with no report of sex work, the weighted lifetime syphilis prevalence was 5.8%, 16.3%, 0.5% respectively and the reported average number of new sexual partners in the past 4 weeks was 1.5, 4.4, 0.1 respectively. After adjusting for other individual characteristics and clustering, two venue-level factors, that is working at sex venues (AOR 24.0, 95% CI 2.5 to 227.6), working in venues located in rural counties (AOR 3.6, 95% CI 1.2 to 10.9), and two individual correlates, ie, self-report of sex work (AOR 2.3, 95% CI 1.0 to 5.3) and being in elder age groups (AOR 7.0, 95% CI 1.5 to 32.2) were significantly associated with risk of lifetime syphilis infection.

Conclusions Females working at social venues had a high rate of new sexual partner acquisition and a high prevalence of lifetime syphilis infection. Females working at sex venues or venues located in rural counties were at relatively high risk of syphilis infection, despite whether they reported engaging in sex work. An intervention strategy focused on the places where social mixing occurs rather than risk group status may contribute to the prevention and control of HIV/STIs in China.

P1-S2.19

UNPROTECTED FELLATIO AND PHARYNGEAL GONORRHOEA IN SYDNEY SEX WORKERS

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Background Sex workers are a priority population in the WHO sexually transmitted infection (STI) global strategy. In Australia, condom use for vaginal sex has remained high over the past decade rates in sex workers with corresponding low rates of STIs. In recent years, there have been anecdotal reports of Sydney sex workers increasingly reporting unprotected fellatio with clients which has coincided with an increase in cases of pharyngeal gonorrhoea in these women. The aim of this study was to investigate the extent and predictors of inconsistent condom use for fellatio at work, and rates of pharyngeal gonorrhoea among sex workers attending a large sexual health clinic.

Methods All female sex workers reporting fellatio at work seen at the Sydney Sexual Health Centre from May 2009 to January 2011 were included. Demographic data, risk behaviours and STI diagnoses were extracted from the clinic database. Pharyngeal gonorrhoea cultures were collected routinely. Multivariate logistic regression analysis was used to determine predictors of inconsistent condom use for fellatio at work.

Results There were 1539 sex workers seen during the study period—most (n=1142, 74%) worked in brothels and 24% reported inconsistent condom use for fellatio at work. Significant independent predictors of reporting inconsistent condom use for fellatio at work were being a new client at our clinic (compared to an

existing client) (adjusted (AOR) 2.66, 95% CI 2.08 to 3.44), speaking a Mandarin or Cantonese language (AOR 3.01, 95% CI 1.67 to 5.42), inconsistent condom use for vaginal sex at work (AOR 12.54, 95% CI 7.32 to 21.48), and being older than 40 years (AOR 2.85, 95% CI 1.91 to 4.25). Thai language speakers were less likely to report inconsistent condom use for fellatio (AOR 0.44, 95% CI 0.23 to 0.83). No significant association was demonstrated for injection drug use or sexual practice outside of work. During the study period 17 of the 1539 sex workers (1.1%, 95% CI 0.6 to 1.8) were diagnosed with pharyngeal gonorrhoea.

Conclusions These finding suggest interventions to promote condoms for fellatio by sex workers are needed. We could not determine if inconsistent condom use for fellatio at work was directly associated with pharyngeal gonorrhoea due to the low sample size of cases. Further research into the determinants of this behaviour, particularly among different language groups is warranted.

P1-S2.20 **FACTORS INFLUENCING CERVICAL INFECTION AMONG FEMALE SEX WORKERS IN BENIN**

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Background As female sex workers (FSW) continue to play a key role in HIV-1 epidemic in sub-Saharan Africa, programs aiming at reducing sexually transmitted infections (STI) involved in HIV acquisition and transmission are still needed. The objective of this study was to determine factors influencing STI acquisition among FSW in Cotonou, Benin.

Methods Three hundred and eighty seven (387) FSW were recruited in a medical center dedicated to STI treatment among female sex workers and their clients. Cervical infections by *Neisseria gonorrhoeae* (NG) and *Chlamydia trachomatis* (CT; SDA, BD Probe Tec®) were investigated at enrolment into the study. All infected FSW received adequate treatment for free. We used a multivariate logistic regression model to assess variables independently associated with cervical infection at enrolment (p value<0.05).

Results The FSW were essentially from Benin (39.5%) and neighbouring countries such as Nigeria (22.1%), Togo (21.8%) and Ghana (15.1%). One hundred and forty three subjects (143; 37.0%) were HIV-1 positive (52 were treated with antiretroviral therapy and 91 remained untreated because not yet meeting eligibility for treatment). Median age (IQR) and median duration (IQR) in the work were 33 (27—40) and 3 (1.2—5) years. Cervical infections by NG and CT were diagnosed in 4.4% and 3.9% cases, respectively. Only two women (0.5%) had both infections. Seventy seven per cent (77.1%) and 86.8% of the FSW reported, respectively, consistent condom use during the last 7 days of work and condom use at last sexual intercourse with a client. After adjustment for age and condom use, being HIV-1 infected [RR 3.04; 95% CI 1.25—to 7.40], not working in a brothel (RR 3.28; 95% CI 1.64—to 9.27), and being working for less than 12 months (RR 3.55; 95% CI 1.53—to 8.23) were independently associated with cervical infection in our study population.

Conclusion Our results suggest that HIV-1 infection and cervical infection by NG and CT alter each other. Antiretroviral therapy in association with preventive programmes aiming at controlling STI should be encouraged among new FSW and also among those working outside brothels.

P1-S2.21 **INTEGRATING PUBLIC HEALTH INTO THE SEX WORKER COMMUNITY IN INDIANAPOLIS**

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Background Syphilis is a significant disease from a public health perspective both historically and as a result of the serious consequences of infection. While studies have explored the epidemiology of syphilis among at-risk populations, limited information exists regarding women's preferences for STD testing and treatment services. The purpose of this study was to explore sex workers preferences for receiving sexual health services.

Methods A total of six groups of 4—7 sex workers each were recruited from local community-based organisations. The semi-structured interview guide included questions based on the Health Belief Model such as—1) cues to action—"Think back to the last time you received a female wellness exam or got tested for STD. What prompted you to schedule that appointment?" 2) Perceived susceptibility—"Describe what worries you most when you think about your health and how it's affected by being on the streets." and 3) perceived barriers—"What are some of the reasons why women who are working the streets don't get tested for STD?" Focus groups lasted 1 h, were audio recorded, and transcribed. Preliminary codes were selected, applied to the transcripts, and key concepts that spanned groups were identified.

Results In general, most women used utilised health protective behaviours to mitigate health risks associated with sex work. However, these behaviours were context and partner specific. Participants were interested in having increased access to sexual health services. Primary themes regarding program development included—experiences with healthcare providers, types of services that would encourage uptake, mechanisms for service delivery and the importance of collaborating with law enforcement and other service providers. The participant's recommendations were organised into a model program with specific service delivery mechanisms for each key concept.

Conclusions These data suggest potential pathways STD control programs to intervene with hard-to-reach populations, like commercial sex workers. In this project, a participant-informed approach was utilised that should result in increased uptake and utilisation of sexual health services because participants provided key insights into the programmatic considerations necessary for STD prevention efforts to be most effective.

P1-S2.22 **CHANGES IN HIV KNOWLEDGE & RISK BEHAVIOURS IN FEMALE SEX WORKERS IN RWANDA - HIV PREVENTION IMPLICATIONS OF TREND ANALYSES IN BEHAVIOURAL SURVEILLANCE**

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In Rwanda, existing empirical and analytical studies indicate that female commercial sex workers (FCSW) play an important role in the HIV epidemic. It is thus critical to track sexual risk behaviours in this group in order to develop effective prevention programs and services for sex workers. In this context, the Ministry of Health (MOH) of Rwanda and partners conducted two rounds of behavioural surveillance surveys (BSS) among FCSW in 2006 and 2010. We used time-location sampling based on geographic maps of sex work