workers, was implemented under the USAID supported Samastha project (2006–2011).

Methods A rapid rural mapping covering 7700 villages across eight districts helped map 16 043 rural female sex workers clustered in about 1700 villages. Rural female sex workers (RFSW) were defined as women who lived and practiced sex work within the village. Peer educators supervised by outreach link workers identified, educated, directly provided condoms and mobilised RFSW to reach HIV services. STI and counselling and testing services were integrated into Primary Health Centres. An individualised web based management information system tracked outreach and services. Polling booth surveys were used to measure key behavioural outcomes.

Results By the fourth year of implementation, 14 697 (91.6%) of the estimated RFSW were reached. Monthly contact rates were sustained at 85%, with each RFSW directly receiving a mean of 28.3 condoms per month. Condom use rates rapidly increased to 63% at last sex with any partner and 78% with clients. 81% received STI services and more than 67% had been directly referred and received their HIV status. The proportion reporting with STI symptoms remained stable at around 60%; however, 64% of these were vaginal discharge. Genital ulcer rates decreased from 5.5 to 0.8% and other STI conditions from 6.1 to 1.7%. HIV prevalence among RFSW across districts ranged from 2 to 4%. Overall, HIV prevalence among antenatal women declined from 1.9 to 0.5% (2006–2009) in these districts.

Conclusions Focused and early interventions can reduce HIV transmission in rural areas and could be impacting even at the population level. It would be important to sustain focused prevention interventions in rural India.

P2-S2.12 CONDOM USE WITHIN INTIMATE PARTNERSHIPS OF FEMALE SEX WORKERS IN SOUTHERN INDIA

doi:10.1136/sextrans-2011-050108.308

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Background Although female sex workers (FSWs) report high levels of condom use with commercial sex clients, particularly after targeted HIV preventive interventions have been implemented, condom use is often low with intimate partners. There is limited understanding regarding the factors that influence condom use with FSWs' non-commercial intimate partners, and how programs can be designed to increase condom use. The main objectives of this study were therefore to describe FSWs' self-reported intimate partners, along with interpersonal factors characterising their intimate partnerships, and to examine factors associated with inconsistent condom use within intimate partnerships.

Methods This study used data collected from cross-sectional questionnaires administered to 988 FSWs in four districts in Karnataka state in 2006. We used bivariate and multivariable logistic regression analysis to examine the relationship between inconsistent condom use (ie, "never", "sometimes" or "frequently", compared to "always") with intimate partners of FSWs (including husbands/cohabiting partners and other non-paying partners) and interpersonal factors describing these partnerships. Weighting and survey methods were used to account for the cluster sampling design.

Results Overall, 511 (51.8%) FSWs reported having husbands/cohabiting partners and 273 (26.0%) reported having other non-paying partners. Inconsistent condom use with these partners was high (77.4% and 60.4% respectively). In multivariable analysis, adjusting for social and environmental factors, the odds of inconsistent condom use with husbands/cohabiting partners and other non-paying partners were 12% (adjusted OR [AOR]: 1.12, 95% CIs 1.06 to 1.17) and 35% (AOR: 1.35, 95% CI 1.13 to 1.62) higher for a one-year increase in the duration of the relationship, respectively. The odds of inconsistent condom use with husbands/cohabiting partners was 50% lower if these partners knew that the respondent was a sex worker (AOR: 0.50, 95% CI 0.29 to 0.86). The odds of inconsistent condom use with other non-paying partners was 68% lower if the respondent reported ever having stayed or lived with these partners (AOR: 0.32, 95% CI 0.13 to 0.79).

Conclusions Improved designs for HIV preventive programs, including partner- or couples-focused programs, should be developed to address issues related to FSWs' intimate partnerships and increase condom use.

P2-S2.13 A PILOT STUDY OF THE EFFECTIVENESS OF A VAGINAL WASHING CESSATION INTERVENTION AMONG KENYAN FEMALE SEX WORKERS

doi:10.1136/sextrans-2011-050108.309

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Background Intravaginal practices have been associated with HIV-1 acquisition. This may be mediated by mucosal disruption, changes in vaginal flora, or inflammatory responses in the genital tract. Reducing vaginal washing could lower women's risk of HIV-1 acquisition. We conducted a prospective study to test the hypothesis that a theory-based intervention would reduce vaginal washing in a cohort of high-risk Kenyan women. We collected pilot data on changes in biological markers that might help to explain the relationship between vaginal washing and HIV-1.

Methods HIV-1 seronegative women who reported current vaginal washing were recruited from a prospective cohort study of high-risk women in Mombasa, Kenya. A theoretical framework including Information Motivation and Behaviour and Harm Reduction was implemented to encourage participants to reduce or eliminate vaginal washing. At baseline and after 1 month, we evaluated vaginal epithelial lesions by colposcopy, vaginal flora by Nugent's criteria, and vaginal cytokine milieu using ELISA on cervicovaginal lavage specimens.

Results Twenty-three women were enrolled. The most commonly reported vaginal washing substance was soap and water (N=14, 60.9%). The median frequency of vaginal washing per week was 7 (IQR 0–14). After one week, 21 (91.3%) participants reported cessation of vaginal washing. After 1 month, all participants reported cessation of vaginal washing ($p \leq 0.001$ for comparison of baseline to follow-up prevalence). The average number of cervicovaginal epithelial lesions by colposcopy decreased after 1 month compared to baseline (Mean [SD] 0.4 [0.6] vs 0.2 [0.5]; coefficient −0.14; 95% CI −0.29 to 0.01; p=0.08). Although there was no change in the prevalence of BV (OR 1.00, 95% CI 0.42 to 2.38; p=1.00]), these pilot data suggest that the likelihood of detecting Lactobacillus by culture might increase after cessation of vaginal washing (2 [8.8%] vs 6 [26.1%]; OR 3.71, 95% CI 0.73 to 18.76, p=0.11). Most cytokine levels were reduced after cessation of vaginal washing, but in this small, time-limited sample none of these changes were statistically significant.

Conclusions A theory-based intervention was highly successful in reducing vaginal washing over 1 month. This pilot study suggests the need for future studies with a larger sample size and longer follow-up to determine the effects of vaginal washing cessation on

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the cervicovaginal epithelium, vaginal flora, and inflammatory markers.

P2-S2.14 ALCOHOL ABUSE AND SEXUAL VICTIMISATION AMONG FEMALE SEX WORKERS IN CHINA

doi:10.1136/sextrans-2011-050108.310

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Background Global literature suggests women often have higher sexual risks under the influence of alcohol abuse. However, data are limited from vulnerable population such as the female sex workers (FSW) in developing countries. The current study aims to fill out the literature gap by examining the association between alcohol abuse and sexual victimisation among FSWs in China.
Methods A cross-sectional survey was conducted among 1022 FSWs who were recruited through community outreach from nine different types of entertainment establishments in Guangxi, China. The FSWs completed a self-administered survey on their demographic, information, alcohol use/abuse behaviours (AUDIT), and sexual victimisation experience. Multivariate regression was employed to assess the relationship between alcohol abuse and sexual victimisation.
Results FSWs who were younger, less educated, never married, and working in an alcohol-serving establishment were more likely to have higher risks of alcohol abuse ($p<0.05$). FSWs who were at higher risks of alcohol abuse reported significantly higher sexual victimisation experience ($p<0.001$). Multivariate models indicated significant relationships between alcohol abuse and sexual victimisation experience while controlling for potential demographic confounders, such as having been made drunk by client (aOR=1.10, 95% CI 1.07 to 1.16), "having been stripped off (aOR=1.07, 95% CI 1.02, 1.13)", "having been taking advantages (aOR=1.08,95% CI=1.05 to 1.12)", "having been asked for extra demands (aOR=1.08, 95% CI 1.05 to 1.11)", and "having been sexually assaulted (aOR=1.08, 95% CI 1.04 to 1.13)".
Conclusion Alcohol abuse was prevalent and associated with sexual victimisation experience among FSWs in China. Culturally appropriate interventions are urgently needed to reduce alcohol use related sexual risks among this vulnerable population.

P2-S2.15 TYPOLOGY OF FEMALE SEX WORKERS AND ASSOCIATION WITH HIV RISKS: EVIDENCE FROM CHINA

doi:10.1136/sextrans-2011-050108.311

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Background The fast growing heterosexual transmission of HIV in China has drawn global attention. Millions of female sex workers (FSW) play a critical role in the escalating epidemic. Existing studies on FSW in China have typically used venue, income or venue to categorise FSW and none developed a data-driven typology based FSW's HIV risks.
Methods A cross-sectional survey was administered among 1022 FSW recruited from 60 different types of entertainment establishments or personal service sectors in southwest China. FSW's HIV risk was measured by a composite score of 12 items on condom use, HIV testing, STD infection, drug abuse. We used multiple regression and graphics to illustrate the relationship between the HIV risk and key FSW characteristics including age, working venue, and income.
Results Unlike previous studies that assumed a linear relationship between HIV risk and age or income, our data revealed that the relationships between HIV risk or income varied by venue. For example, older FSW in clubs or massage parlour reported lower level of HIV risks compared to their counterparts whereas older FSW in saner or KTV reported higher level of HIV risks; but age was not significantly associated with HIV risk for FSW working in hair salons or streets. Income was positively associated with HIV risks; however, the association reversed after the income reached 1500 ¥ ($225). None of the key variables such as age, income, or venue can predict HIV risks singularly; in addition, all three variables need to be integrated to devise the appropriate typology.
Conclusion Our study suggests that it was too simplistic to categorise FSW HIV risks by a single indicator; the interactions between individual and environmental factors underscored the importance of multiple indicators for typology. Interventions to reduce HIV risks in FSW in China could be more focused and targeted those at highest risks.

P2-S2.16 IMPACT OF DURATION OF EXPOSURE TO SEX WORK ON HIV PREVALENCE IN 23 DISTRICTS OF SOUTHERN INDIA

doi:10.1136/sextrans-2011-050108.312

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Background HIV prevalence among female sex workers (FSW) in various districts of Andhra Pradesh (AP), Karnataka (KA), Maharashtra (MH), Tamil Nadu (TN) ranged between 8 and 26%, 10 and 34%, 6 and 38%, 2 and 13%, respectively, in 2005–2006. The duration of selling or buying sex has been suggested as a key determinant that may explain ecological difference in HIV prevalence. Thus, we estimated FSW duration across geographically distinct districts and assessed its impact on HIV transmission.
Methods Cross-sectional FSW survey data from 23 districts of MH, TN, KA, AP (2005–2006) (IBBA), collected as part of the evaluation of Avahan, the India AIDS initiative, were used to estimate FSW duration (crude duration=difference between age at survey and age of entry into sex work). "Corrected" durations that adjust for the censored nature of the data (as FSW are still in sex work) were estimated for FSW using a birth-and-death dynamical model (with 9 duration compartments) fitted by maximum likelihood to each district-specific FSW IBBA duration distribution. A deterministic model of HIV transmission among FSW/clients was parameterized/fitted to Belgaum IBBA data with crude FSW duration of 9.6 years for FSW. FSW duration was thereafter varied between 1and 33 years to assess its influence on model HIV prevalence, for different assumed client duration (4–17 years). Each individual leaving was replaced by a new susceptible person.
Results Mean crude FSW durations ranged between 3.7 and 9.6 (median 3–7) years across districts compared to 4.3 (Bangalore, Thane street-based) and 12.5 (Belgaum) after correction. District average corrected durations tended to be shorter for TN (6 years) and longer for MH (9 years). Within-district differences (ratios) between corrected and crude durations ranged between 0.5 and 3 years (1.1–1.3-fold). Observed differences in FSW duration across

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