

## 02-S1.04 EFFECTIVE ART, VIRAL LOAD AND SEXUAL BEHAVIOUR OF HIV POSITIVE MEN WHO HAVE SEX WITH MEN: CHANGES FROM 2000 TO 2010

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**Background** Early initiation of combination antiretroviral treatment (ART) is being considered as a HIV prevention strategy. Thus, it is important to examine the association between ART, viral load (VL) and the sexual behaviour of HIV+ve patients. We compared the reporting of unprotected anal sex (UAI) in 2010 and 2000 among HIV+ve men who have sex with men (MSM) and its association with VL.

**Methods** HIV+ve MSM attending a central London HIV clinic were recruited in cross-sectional surveys in 2000 (411 men) and 2010 (423 men). Data on recent plasma VL (detectable (DVL) or undetectable (UVL)); ART status (treatment naïve or receiving ART); UAI with a boyfriend (main partner) and casual partners in the last 6 and 12 months respectively; boyfriend's HIV status (unknown/negative, or positive) were collected. Nonconcordant UAI (ncUAI) was defined as UAI with unknown/negative HIV status partner(s) and concordant UAI (cUAI) as UAI only with HIV+ve partner(s). Men reporting cUAI and ncUAI were treated as engaging in ncUAI. OR for 2010 compared to 2000 for UAI with casual partners were adjusted for age and DVL/UVL. Analysis for UAI with a boyfriend was adjusted also for boyfriend's HIV status and is restricted to those reporting a boyfriend.

**Results** Compared to 2000, 2010 respondents were more likely to be on ART with UVL (76% vs 40%), but less likely to be on ART with DVL (6% vs 32%) or treatment naïve (19% vs 28%),  $p < 0.001$ . They were older (age  $\geq 45$  years: 46% vs 22%,  $p < 0.001$ ), more likely to report an HIV+ve boyfriend (41% vs 25%;  $p = 0.001$ ). An increase in cUAI with a boyfriend (27% vs 14%) remained significant after adjustment, (OR: 2.84, 95% CI: 1.59% to 5.06%;  $p < 0.001$ ). ncUAI with a boyfriend did not change (12% vs 11%;  $p = 0.63$ ). With regards to casual partners, cUAI decreased over time (OR: 0.50, 95% CI: 0.29% to 0.86%;  $p = 0.01$ ) but ncUAI increased (34% vs 17%; OR: 2.79, 95% CI: 1.93% to 4.04%;  $p < 0.001$ ). UVL was not associated with ncUAI with casual partners or boyfriend, but was associated with increased cUAI with casual partners (OR: 1.83, 95% CI: 1.08% to 3.13%;  $p = 0.02$ ).

**Conclusions** In comparison with 2000, cUAI with a boyfriend has increased, perhaps due to increased serosorting. In casual partnerships cUAI decreased and ncUAI increased. The latter has implications for onward HIV transmission and needs to be addressed by health promotion programmes. As UVL was not associated with ncUAI, these data do not suggest that early initiation of effective ART will increase HIV transmission.

## 02-S1.05 VULNERABILITY RE-ASSESSED: THE CHANGING FACE OF SEX WORK IN GUNTUR DISTRICT, ANDHRA PRADESH

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Guntur district in Andhra Pradesh, south India, has over 10000 female sex workers (FSWs), of whom one fifth are estimated to be HIV infected. Following implementation of the Bill & Melinda

Gates Foundation funded India AIDS prevention initiative, Avahan, we conducted qualitative studies with FSWs in Guntur district to examine in-depth, perceptions, behaviour and issues pertaining to their vulnerability to HIV infection. Three focus group discussions and 40 in-depth interviews were conducted with 60 FSWs, selected by random sampling. The study found evidence that client solicitation practices are changing in Guntur district, with sex workers now soliciting clients in their homes, often using mobile phones, or at their workplace, rather than in brothels or in public places. In addition, clients are most frequently requesting anal instead of vaginal sex, possibly resulting from recent exposure to pornography. FSWs were frequently unaware that unprotected anal intercourse put them at risk of HIV or other STIs, and the majority reported unprotected anal intercourse with their clients. Older FSWs and HIV-infected FSWs reported living in extreme poverty and were particularly vulnerable, often agreeing to unprotected vaginal and anal intercourse to earn enough money to survive. This, coupled with sharing of clients by home-based FSWs, suggests continued and changing vulnerability in this setting where many FSWs are already HIV infected and where understanding of risk appears deficient. Monitoring the changing sex work environment and adapting programmes accordingly will be crucial if HIV prevention programmes are to continue to reach these target populations effectively.

## 02-S1.06 COMMUNITY RESPONSES TO AN HIV EPIDEMIC IN SOUTH INDIA: KNOWLEDGE, MORAL PANIC AND CULTURAL INERTIA

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**Background** Studies have shown that as communities face serious threats to traditional values, such as that posed by HIV, cultural inertia may result, whereby existing trends towards more liberalised views of sexuality are stalled, particularly among the educated and youth. We examined changes in attitudes around HIV in Bagalkot district, south India, between 2003 and 2009.

**Methods** General population surveys were conducted in 2003 and 2009, among approximately 6600 randomly sampled men and women in 10 villages and 20 urban blocks. Questions about HIV knowledge, sexuality, gender and condoms were included.

**Results** Knowledge of HIV increased from 77% in 2003 to 88% in 2009, and condom awareness increased significantly (37.4%–65.4%). However, in 2009, only 23% of people mentioned condoms spontaneously as a means of preventing transmission (an increase from 8% in 2003). There was an increase in those who thought sex workers should be compulsorily tested for HIV (63.0% vs 73.5%,  $p = 0.01$ ). An increasing number of people agreed that it is wrong to talk about sex" (24.2% vs 29.2%,  $p = 0.05$ ), especially women (21.9% vs 32.4%,  $p < 0.01$ ). There was an increase in those who thought it "wrong to talk about AIDS in a respectable family" (16.4% vs 0.22.1%,  $p = 0.01$ ), largely among urban women, youth and the more educated, and more in 2009 thought it improper for respectable people to discuss condoms (5.5% vs 17.9%,  $p < 0.01$ ). In 2003, 11.8% agreed that "access to condoms promotes promiscuity", increasing to 29.5% in 2009 ( $p < 0.01$ ). Men, educated people, urbanites and young people under 25 were the most likely to believe this. Sex education was thought to be equally damaging, especially among women and young people, with more agreeing that it promotes sexual activity and promiscuity in 2009 than in 2003 (19.3% vs 30.2%,  $p < 0.01$ ).

**Conclusions** Although scapegoats (in the form of sex workers) were increasingly identified by the community, stigma towards those with HIV appeared to have reduced significantly. Despite increased knowledge and positive changes around stigma, fear of change to cultural mores was apparent, with unwillingness to embrace openness and discuss sexuality. Young and educated respondents appeared to be the most regressive thinkers, reflecting a cultural inertia that mirrors studies of other threats to traditional societal values. More effort is required to educate young people about healthy sexuality, openness and safe sex.

## Social and behavioural aspects of prevention oral session 2—Innovative STI and HIV preventive interventions: intended and unintended consequences

### O2-S2.01 THE PROJECT CONNECT HEALTH SYSTEMS INTERVENTION: STD SCREENING AND HIV TESTING OUTCOMES FOR FEMALE ADOLESCENTS

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**Background** Access to STD screening and HIV testing are important components of sexual and reproductive health care for adolescents. However, few youth have ever had an STD or HIV test, suggesting a need for new approaches to linking adolescents to care. Project Connect is an 8 year, quasi-experimental study of a multi-level intervention to prevent STD, HIV, and teen pregnancy. The Health Systems Intervention component was designed to provide an effective conduit to link youth to available health care services. Community health care providers who offered adolescents high quality care were identified and recruited for a referral system implemented through school nurses.

**Methods** Six intervention and six control high schools in a public school district in the Los Angeles, California area participated in the study. Analyses included survey data from 6623 sexually experienced (ever engaged in sexual intercourse) and 4703 sexually active (engaged in intercourse in the past 3 months) female high school students across 5 years (T1–T5). Both samples were 78% Latino and 13% African American; the mean age was 16.6. A mixed model logistic regression analysis was used to test for intervention effects. Random effects on the student level were included to control for repeated measures.

**Results** Statistically significant intervention effects were observed overall among both samples (see Abstract O2-S2.01 table 1 for adjusted OR and 95% CIs for sexually experienced sample) for receiving STD testing or treatment in the past year and ever being tested for HIV. At T1, for example, 18% of sexually experienced intervention females reported being tested/treated for an STD in the past year; at T5, 29.2% reported having done so. In the control condition, 17% reported STD testing/treatment in the past year at T1, which remained relatively stable by T5, at 19.9%. Among sexually experienced females statistically significant increases were also found for ever being tested for an STD.

Abstract O2-S2.01 Table 1 Adjusted OR for the change between time points in sexually experienced females

Time point paired difference	AOR (95% CI)		
	STD test/Tx past year	Ever STD test	Ever HIV test
T2-T1	1.12 (0.66 to 1.98)	1.06 (0.57 to 1.97)	1.16 (0.59 to 2.26)
T3-T1	1.73 (1.02 to 2.95)*	1.44 (0.77 to 2.70)	1.42 (0.73 to 2.28)
T4-T1	1.67 (0.965 to 2.87)	1.97(1.03 to 3.77)*	2.20 (1.10 to 4.39)*
T5-T1	1.93 (1.14 to 3.26)*	1.28 (0.68 to 2.41)	1.94 (0.99 to 3.81)
T3-T2	1.55 (0.93 to 2.56)	1.36 (0.75 to 2.45)	1.23 (0.65 to 2.32)
T4-T2	1.49 (0.88 to 2.51)	1.86 (0.99 to 3.48)	1.90 (0.97 to 3.71)
T5-T2	1.72 (1.04 to 2.85)*	1.21 (0.66 to 2.22)	1.67 (0.86 to 3.24)
T4-T3	0.96 (0.57 to 1.62)	1.36 (0.74 to 2.50)	1.55 (0.81 to 2.96)
T5-T3	1.11 (0.67 to 1.84)	0.89 (0.49 to 1.61)	1.37 (0.72 to 2.59)
T5-T4	1.16 (0.70 to 1.91)	0.65 (0.36 to 1.18)	0.88 (0.47 to 1.65)

\*p<0.05.

**Conclusions** Project Connect was successful in linking female adolescents to sexual and reproductive health care through high school nurses. Rather than attempting to change provider behaviour, this structural intervention capitalises on existing, adolescent-focused expertise among local medical providers. It is a low-cost, sustainable strategy for linking (or ensuring access for) adolescents to care and could be widely implemented.

### O2-S2.02 SEX WITH STITCHES, THE RESUMPTION OF SEXUAL ACTIVITY DURING THE POST-CIRCUMCISION HEALING PERIOD IN ZAMBIA

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**Background** As male circumcision (MC) programs are scaled-up for HIV prevention, it is critically important to measure the prevalence of risk behaviours post-MC. Of particular concern is the potential risk of increased HIV-1 transmission and acquisition as a result of premature resumption of sexual activity during the 6-week healing period post-MC, when clients are instructed to abstain from sex. The presentation will review the prevalence of sex post-MC, highlight risk factors for the early resumption of sex and model the impact of such behaviour at the population level.

**Methods** The study was conducted in four provinces of Zambia in which male circumcision services are being scaled-up. A sample of 248 males aged 15–29 were interviewed via ACASI immediately prior to and 6 weeks after their circumcision; the study follow-up rate was 90%. At baseline, participants were asked about risk behaviours, as well as their knowledge and attitudes about MC. At follow-up, participants were asked about sexual activity in the previous 6 weeks, the timing of resumption of sex post-MC, and other sexual risk behaviours. To evaluate the impact of the study results at the population level, a model was used to estimate the number of new infections that are attributable to the early resumption of sexual activity and the number of infections averted due to the MC program.

**Results** Preliminary findings indicate that of the men who were followed up, 24% reported resuming sexual activity prior to 6 weeks. The prevalence of early sex is higher (30%) for men who were already sexually active at baseline. Of men who resumed sex prior to 6 weeks, 46% did so in the first 3 weeks post-MC; 22% initiated sex within the first week. Further, 82% reported at least one unprotected sex act, and 26% reported multiple sexual partners. Data also suggest these men had higher risk behaviours at baseline. Modelling the impact of such behaviour indicates that the benefits of the MC