

# Epidemiology poster session 6: Preventive intervention: Partner notification

**P1-S6.50 CHLAMYDIA PARTNER NOTIFICATION FOR ADOLESCENT FEMALES, SAN FRANCISCO, 2010**

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**Background** In 2009, African American women 15 to 19 years of age had the highest rate of chlamydia of any population in San Francisco (10762.13 cases per 100 000 residents per year). Screening and education efforts had not succeeded in lowering rates in this population. Previous research suggests that adolescents may have fewer partners and fewer anonymous encounters than other patients with whom we conduct partner notification. We evaluated a pilot program of contact tracing aimed at male partners of adolescents women diagnosed with chlamydia living in selected neighbourhoods.

**Methods** Residential addresses for all reported females under 20 years of age reported with a Chlamydia infection were geocoded. Cases residing in neighbourhoods with the highest rates of Chlamydia in 2009 were assigned to a health worker for partner notification. Cases were interviewed at least two weeks after being tested in order to give providers time to disclose the results. Names of male partners during the previous three months were collected along with locating information. The total number of partners for each woman (including unnamed partners) was also recorded. Male partners were contacted by the health worker; if partners had not been tested or prophylactic ally treated, they were tested for Chlamydia and treated if positive.

**Results** Between 1 June 2010 and 31 December 2010, 296 Chlamydia cases were reported among women under 20 years of age. Of these, 106 (35.8%) resided in the priority neighbourhoods. Only 64 cases (60.4%) were located and interviewed; all but one of the remaining cases were not locatable. The cases claimed a total of 96 male partners, with 66% claiming just one partner in the previous 3 months, and only two cases claiming more than three partners. However, only 39 partners (40%) were named, including 11 partners residing out of jurisdiction, and 4 who had already been treated by the time they were located. Eleven (11) male partners were tested, and only 2 were positive for Chlamydia. The greatest barrier to contacting the cases and their male partners was cell phones numbers that were disconnected by the time we needed to use them.

**Conclusion** While women in this population have fewer anonymous encounters than other populations targeted using partner notification, few cases among male partners were brought to treatment.

Partner notification for adolescent females will likely have minimal impact on chlamydia transmission.

# Epidemiology poster session 6: Preventive intervention: ARV

**P1-S6.51 ANTIRETROVIRAL THERAPY, SEXUAL BEHAVIOUR, AND THEIR SIMULATED IMPACT ON HIV EPIDEMIOLOGIC TRENDS IN UGANDA**

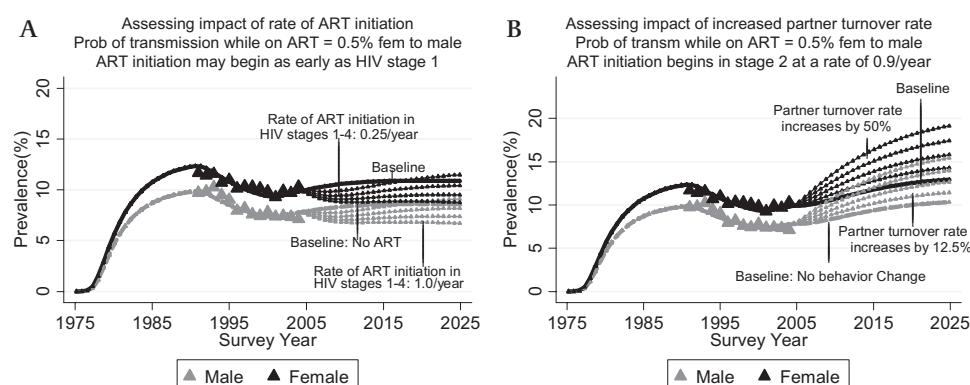
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**Background** Debate exists concerning the potential impact of ART on the HIV epidemic in Africa. We combine empirical evidence for sexual behaviour change in response to ART in a Ugandan cohort, with mathematical modelling, to examine the likely impact of ART on the HIV epidemic, accounting for potential behaviour change.

**Methods** Cohort participants are surveyed every 3 months on sexual behaviours. ART rollout began in 2004. Using regression, we examined potential associations between timing of ART initiation and sexual behaviour among HIV-infected, and timing of ART availability and sexual behaviour among HIV-uninfected. We then used a compartmental mathematical model to assess the impact of ART on HIV epidemiologic trends, under varying assumptions about rates of initiating ART and behaviour change. The model has been described previously in peer-reviewed literature.

**Results** We found no evidence of increased risk behaviour after ART initiation to levels higher than 2 years before initiation. There is some evidence of rising risk behaviour among HIV-uninfected people in response to ART availability. Among HIV-uninfected, the mean number of casual partners in the past 3 months fell from 0.02 in 2002 to 0.01 by 2004 and then rose to 0.03 by late 2008 (p for change in trend from declining to rising numbers of casual partners over the period 2002–2008=0.030). The mean number of new partners in the past 3 months fell from 0.13 in early 2002 to 0.02 in the late 2004. By 4th quarter of 2008, the number of new partners in the past 3 months had risen to 0.20 (p=0.058). Regardless of changing sexual behaviour, the model suggests that ART will reduce HIV incidence, but increase prevalence. This occurs even when ART initiation begins in HIV stage 2 (~3 months after infection) and 90% of HIV-infected are on ART and the probability of transmission while on ART declines greatly (right panel of Abstract P1-S6.51 Figure 1 baseline of no ART displayed in left panel). The conditions required for ART to reduce prevalence had to be more extreme than this (left panel).



Abstract P1-S6.51 Figure 1 Sensitivity analyses of dual impact of ART and potential behaviour change on HIV prevalence.

**Conclusions** Due to HIV+ people enjoying a longer life expectancy, and an insufficient drop in incidence, HIV prevalence will rise as a result of ART. Modelling suggests that even small increases in risky sexual behaviour will lead to further substantial increases in HIV prevalence. Policy makers are urged to continue promoting sex education, and be prepared for a higher than previously suggested number of HIV+ people in need of treatment.

**P1-S6.52 IS PEP A MISUSED THERAPY? CROSS SECTIONAL PEP STUDY IN SEX WORKER OUTREACH PROGRAM CLINIC**

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**Background** Post-exposure prophylaxis (PEP) is a short-term antiretroviral (ARV) treatment that reduces the likelihood of HIV infection after exposure to HIV-infected blood or sexual contact with an HIV-positive person. We are able to offer PEP mediations in our SWOP clinics to clients reporting high risk exposure. Normally ARVs for PEP are given within 72 h of exposure for a period of 4 weeks. Our objective was to assess whether the clients had already established STIs prior administration of PEP. The clients were aged between 19 and 49 years with each having an average of 9 men clients per day.

**Methods** A cross sectional study was conducted on 91 female sex workers who came to the clinic for PEP in the period September 2009 to July 2010. The female sex workers were first given counselling, completed a standard questionnaire before having PEP administered. The samples taken included blood for HIV Elisa, high vaginal swab for Gonorrhoea Culture on Thayer martin media and Gram stain smear for Bacteria vaginosis, presence of spermatozoa and white blood cells.

**Results** The clients were all HIV seronegative. 76% of the women had come for PEP for the first time, 21% for the second time and 3% for the third time. 80% of the patients reported condom burst, 8.6% were as a result of rape or coerced sex, while 3.2% reported client refused condom use. However 73% smears of the women did not have spermatozoa. Overall 9% of the patients were GC positive but 3.2% had GC and spermatozoa while 6.6% had GC without spermatozoa. Trichomonas prevalence was 4.3% but all these patients did not have spermatozoa. 38% had a WBC count of over 6–30 field on gram stain Conclusion: The presence of high white cell count at the time of seeking PEP may indicate a pre-existing infection, hence presence of underlying high risk behaviour. Moreover presence of GC and TV without spermatozoa may also indicate exposure longer reported. There is need to educate sex workers on proper use of PEP and to maintain low risk behaviour. We also need to understand the decision making process of sex workers in choosing post-exposure prophylaxis and any barriers that may contribute to delays in seeking PEP.

**P1-S6.53 ANTIRETROVIRAL THERAPY REDUCES HIV TRANSMISSION IN DISCORDANT COUPLES IN NORTHERN MALAWI**

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**Background** Antiretroviral therapy (ART) reduces viral load and has been suggested as a prevention measure to reduce transmission. However there are concerns that this may be counterbalanced to some extent by increased sexual activity associated with improved

health and decreased condom use. The impact of ART on rates of HIV-transmission was investigated within HIV discordant couples in rural, Northern Malawi.

**Methods** The study was conducted as part of the Karonga Prevention Study. A demographic surveillance system was started in 2001 and annual home-based HIV sero-surveys added from 2007, with individual counselling and consent. From the first round of the sero-survey, 201 HIV discordant couples (147 male positive, female negative; 54 male negative, female positive) were identified for whom follow-up HIV data were available in the negative partner. Free ART is available at local health facilities and ART use was determined by linkage of data to a clinic based cohort and self-report. Patients attend ART clinics with a guardian who may be the spouse, and are counselled about the need for safer sex. For this analysis participant exposure to ART was defined as having started ART prior to study entry, and follow-up was censored at time of last observation, HIV seroconversion, last negative HIV test, death, departure or dissolution of marriage. Follow-up with re-testing is ongoing.

**Results** So far there are 249 and 99 person-years of follow-up in HIV negative women and men, respectively. 55 of the 201 positive partners had commenced ART at entry and within these couples no HIV transmission occurred over a 3-year follow-up period. Among 146 discordant couples without ART the rate of transmission to females was 5.2 / 100 person years (95% CI 2.7 to 10.5) and to males 1.3/100 person years (95% CI 0.18 to 9.4).

**Conclusions** In HIV discordant couples ART is associated with reduced rates of HIV transmission within partnerships.

## Epidemiology poster session 6: Preventive intervention: Circumcision

**P1-S6.54 MEDICAL MALE CIRCUMCISION MAY BE PROTECTIVE OF UROGENITAL MYCOPLASMA GENITALIUM INFECTION: RESULTS FROM A RANDOMISED TRIAL IN KISUMU, KENYA**

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**Background** We determined the prevalence of *Mycoplasma genitalium* (MG) and whether this was associated with circumcision status, among men enrolled in the randomised trial of medical male circumcision (MMC) to prevent HIV acquisition in Kisumu, Kenya.

**Methods** MG was detected in first void urine (FVU) by APTIMA transcription mediated amplification (TMA) assay. FVU and urethral swabs were assessed for *Neisseria gonorrhoeae* (NG) and *Chlamydia trachomatis* (CT) by PCR, and for *Trichomonas vaginalis* (TV) by culture. HSV-2 detection was by IgG ELISA. Personal interview assessed socio-demographic and behavioural risks. All men underwent standardised medical history and physical examination.

**Results** July through September 2010, 52 (9.9%; 95% CI: 7.3 to 12.4%) MG infections were detected among 526 men. The prevalence of NG (1.4%) and TV (2.7%) did not differ by MG status. CT prevalence was 5.8% among MG-infected men, and 0.8% among MG-uninfected men (p=0.02). CT infection at enrolment was more prevalent among MG infected men (27% vs 9% uninfected, p=0.005); NG and TV at enrolment were not associated with MG. Current urethral discharge symptoms and exam findings did not vary by MG status (1.9% positive vs 1.5% negative, p=0.80), but