looked at variables we thought would be stable over the two cycles and were surprised to find instability. With these differences, we cannot attribute the observed changes in risky behaviour solely to prevention efforts that occurred between the surveillance cycles. However, RDS remains an exceedingly easy and efficient sampling method and with appropriate multivariable analysis techniques can be used with repeated samples over time.

Epidemiology poster session 5: Transmission dynamic

P1-S5.01 HETEROSEXUAL ANAL SEX, LUBRICATION, HIV, AND HSV-2 INFECTION AMONG WOMEN

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Background Anal intercourse (AI) is associated with increased HIV and STI risk. Anal douching and use of AI lubrication may increase susceptibility to infection and may influence results of trials of microbicides for HIV prevention through effects on the rectal environment and on adherence to investigational microbicidal products. We measured the frequency of heterosexual AI, anal practices and lubricant use and their association with HIV and HSV-2 infection among women.
Methods Between October 2008 and June 2009, we recruited women age 18 years and older in Los Angeles. At the enrolment visit and at the 12-month visit, participants underwent a self-administered, web-based questionnaire covering demographic factors, sexual Behaviours, and anal practices. HSV-2 was diagnosed by IgG ELISA, and HIV was diagnosed by rapid ELISA with confirmation by Western blot. Here we report data collected during the enrolment visit.
Results We enrolled 141 women (34% identified as White, 40% Black, 26% Hispanic; the median age was 33 years (IQR=25–44)). Overall, 71% reported ever having AI, and 8% reported AI as current means of contraception. Overall, 18% reported AI over the past month, and among these women, the median number of monthly AI acts was 2 (IQR=1–3), 50% reported unprotected AI, 8% reported anal douching, and 58% reported using lubricant during AI. Commercial lubricants (38%), saliva (23%), petroleum jelly (15%), and lotion (12%) were the most commonly reported lubricants. The prevalence of HIV was 27% and HSV-2 was 57%. In multivariable analysis, AI was associated with testing positive for HIV (aOR=7.8 (95% CI=1.6 to 37.6)) and HSV-2 infection (aOR=3.3 (95% CI=1.2 to 9.1)) controlling for age, race, and lifetime sexual partners.
Conclusion AI is associated with HSV-2 and HIV infection, and anal douching and use of anal lubricating products not specifically designed for intercourse is common among women. The frequency and health effects of anal practices and lubricants warrant further study.

P1-S5.02 TOWARDS MORE ROBUST ESTIMATES OF THE PER SEX ACT TRANSMISSION PROBABILITY OF *CHLAMYDIA TRACHOMATIS*

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Background Estimating the per sex act transmission probability of *Chlamydia trachomatis* is necessary to assess an individual's risk of infection and re-infection after sexual contacts with chlamydia-positive partners. Katz (1992, *Stat Med*) made one of the first attempts to estimate the probability of chlamydial transmission based on data about the proportions of concordant (both partners infected or uninfected) and discordant (only one partner infected) couples tested for chlamydia. This provides a cross-sectional per partnership transmission probability but did not address the duration of sexual partnerships and the spontaneous clearance of chlamydia. Mathematical models can be used to take these complexities into account.
Methods We developed a simple mathematical model of chlamydia transmission that incorporates the formation and dissolution of sexual partnerships. Chlamydia can be transmitted from an infected to an uninfected partner throughout the duration of the partnership. Infected partners can also clear chlamydia spontaneously. The model was fitted to published data from a cross-sectional study of chlamydia infection status in heterosexual couples at a US sexually transmitted diseases clinic. The model was further parameterised with study data about overall chlamydia positivity and the number of sexual partners in the last 6 months.
Results The data showed similar proportions of infected female partners of infected men and infected male partners of infected women, suggesting similar transmission probabilities. Assuming an average infectious duration of 12 months for women and men, we obtained best-fit estimates for the transmission rate (0.0064 per day) and average duration of partnerships (6.0 months) in the study. The transmission rate per day corresponds to a per sex act transmission probability of 4.5%, assuming one unprotected episode of coitus per week in a partnership. Our analysis also shows that these estimates depend on the assumed infectious duration of chlamydia.
Conclusions Our approach shows how the dynamics of sexual partnership formation and disease transmission can be taken into account to derive the daily rate of chlamydia transmission within a partnership. The per sex act transmission probability can then be inferred. These refined estimates will help to parameterise future mathematical models of disease transmission and assess the risk of infection and re-infection after sexual contacts with chlamydia-positive partners.

P1-S5.03 PATTERN OF SEXUALLY TRANSMITTED INFECTIONS (STIS) IN HORMONAL CONTRACEPTIVES AND INTRA-UTERINE DEVICES (IUD) USERS ATTENDING FAMILY PLANNING CLINICS IN IBADAN, NIGERIA

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The large majority of women who acquire HIV and other sexually transmitted infections (STIs) are in their childbearing years and are current or potential users of contraceptive methods. Using contraceptives has two main benefits; the primary benefit of preventing unplanned pregnancy and the potential secondary benefit of protecting against sexually transmitted infections (STIs). Unfortunately, the contraceptive with the best records for pregnancy prevention offers little if, any protection against STIs. The study aimed at assessing the pattern of sexually transmitted infections among hormonal contraceptives and intra-uterine contraceptive devices users attending family planning clinic, University College Hospital Ibadan.
Methods This is a cross-sectional study in a population of women using Intra-Uterine Contraceptive Devices (IUCD) and hormonal contraceptive methods attending Family Planning clinics at University College Hospital, Ibadan. Detailed medical history, Endocervical and high vaginal swabs were collected from the participants to establish diagnosis after clinical examination and informed consent.
Results There were 200 participants with a mean age of 31.92 years (SD=8.33, range=16–55). The mean age of sexual debut of participants