the reduction (due to behaviour change only) would be ~50%, from 8–12 to 5–7. If the duration of PHI is shorter, or testing frequency is lower frequency, and/or viral-load suppression is slower then the number of infections averted is reduced.

Conclusion Diagnosing HIV during PHI can markedly reduce transmission because its high infectivity and short duration make treatment and even short-term behaviour change effective in reducing transmission. Cost-effectiveness would be increased by efficient approaches to identifying PHI (e.g. encouraging HIV testing after episodes of high-risk behaviour and intensive contact tracing from recently-infected individuals, since PHI cases are likely to be clustered). Our quantification of the number of infections averted is an essential component of assessment of the cost-effectiveness of strategies to increase diagnoses of PHI.

P5.24 DRUG RESISTANCE AMONG WOMEN ATTENDING ANTENATAL CLINIC IN GHANA

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Introduction Initial evidence from resource-limited countries using the WHO HIV drugresistance (HIVDR) threshold survey suggests that transmission of drug-resistance strains is likely to be limited. However, as access to ART is expanded, increased emergence of HIVDR is feared as a potential consequence. We have performed a surveillance survey of transmitted HIVDR among recently infected persons in the geographic setting of Accra, Ghana.

Methods As part of a cross-sectional survey, 2 large voluntary counselling and testing centres in Accra enrolled 50 newly HIV-diagnosed, antiretroviral drug-naïve adults aged 18 to 25 years. Virus from plasma samples with >1,000 HIV RNA copies/mL (Roche Amplicor v1.5) were sequenced in the pol gene. Transmitted drug resistance-associated mutations (TDRM) were identified according to the WHO 2009 Surveillance DRM list, using Stanford CPR tool (v 5.0beta). Phylogenetic relationships of the newly characterised viruses were estimated by comparison with HIV-1 reference sequences from the Los Alamos database, by using the ClustalW alignment program implemented.

Results Subtypes were predominantly D (39/70, 55.7%), A (29/70, 41.4%), and C (2/70; 2.9%). Seven nucleotide sequences harboured a major TDRM (3 NNRTI, 3 NRTI, and 1 PI-associated mutation); HIVDR point prevalence was 10.0% (95%CI 4.1% to 19.5%). The identified TDRM were D67G (1.3%), L210W (2.6%); G190A (1.3%); G190S (1.3%); K101E (1.3%), and N88D (1.3%) for PI.

Conclusion In Accra the capital city of Ghana, we found a rate of transmitted HIVDR, which, according to the WHO threshold survey method, falls into the moderate (5% to 15%) category. This is a considerable increase compared to the rate of among women attending an antenatal clinic in mambobi. As ART programs expand throughout Africa, incident infections should be monitored for the presence of transmitted drug resistance in order to guide ART regimen policies.

P5.25 FEASIBILITY OF A POINT-OF-CARE MODEL FOR THE PREVENTION OF MOTHER TO CHILD TRANSMISSION OF SYPHILIS IN CALI, COLOMBIA

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Introduction Most women in Colombia receive antenatal care (ANC), but goals for the reduction of congenital syphilis (CS) have not been met. In 2015 Cali had an incidence of 3.0 cases of CS per 1000 births. Point of care testing (POC) has proven cost-effective, and since 2015 it is now recommended by the Colombian Ministry of Health Guidelines. Nevertheless, POC for gestational syphilis (GS) has not been implemented in ANC. We sought to test the feasibility of POC and identify barriers to its implementation in Floralia, a public, primary healthcare centre in Cali.

Methods During a three-month period, we observed routine ANC in Floralia and offered women on-site rapid tests (RT) for syphilis. Process measures were compared with data from the clinical charts (CC) of women seen in 2015. Patients and administrators were interviewed and asked to describe ANC, syphilis screening procedures, and to identify opportunities for improvement.

Results 55 women were offered POC testing, 42 agreed to participate and were screened. 55 CC from 2016, and 123 CC from 2015, were reviewed. The median gestational age at which women sought health care was eight weeks. The first trimester of pregnancy had the highest percentage of women screened for GS: 97% were screened in 2015, and 100% were screened in 2016. Changes to screening procedures were hindered by existing contracts with insurance companies (IC); they determine what tests can be ordered and who can order them. Administrative procedures lead to missed opportunities for screening and treatment. Two women (1.6%) from the 2015 group were diagnosed with GS, and three (5.4%) were diagnosed during the intervention. POC testing allowed us to treat GS on the same day of the positive result, while using routine testing methods took 6 to 24 days.

Conclusion Diffusion of the national guidelines for GS has been insufficient to control GS and CS: There is still confusion among health care workers, and contracts with IC do not include RT. POC for syphilis can be a part of ANC, but barriers need to be addressed before implementation.

P5.26 ATYPICAL PAP SMEAR BEFORE AND AFTER HPV VACCINE IN PRIVATE SERVICE AT FORTALEZA, BRAZIL

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Introduction HPV vaccine is a powerful tool in to prevent cervical cancer. It was commercially introduced in Brazil in 2008 and only in 2013 the government starts in public health. Objectives: To assess the influence of the introduction of HPV vaccine in Fortaleza (Brazil) in the results of Pap smear.

Methods The results of Pap smear between 2006 and 2014 in Prof. Eleutério Laboratory were searched in the files to

evaluate the influence of the use of vaccine even without identification of who used the vaccine. The frequency of atypias was compared year by year. The research was approved by Ethical committee of Federal University of Ceará.

Results During nine years was performed 205056 Pap smears in the laboratory. In general the atypias (>ASC-US) occurred in 4927 cases (2.4%). In 2006 the atypias (>ASC-US) occurred in 598 cases (2.24%), and in 2007 in 739 cases (2.7%). The vaccine was introduced in 2008 when the cytological atypia occurred in 873 cases (3.5%). The in 2009, 2010, 2011, 2012, 2013 and 2014 the frequency was respectively, 598 (2.52%), 456 (2.02%), 540 (2.42%), 437 (2.06%), 349 (1.72%) and 227 (1.4%). When we evaluated only the women with less than 18 years old the results were: 2006–416 (2.4); 2007 – 363 (3.6%); 2008 – 389 (3.6%); 2010 – 459 (2.6%); 2011–440 (3.9%); 2012 – 428 (1.9%); 2013 – 375 (1.3%) and 2014 – 397 (1.01%).

Conclusion After the introduction of the HPV vaccines the cytological atypia in Pap smear decrease in Fortaleza - Brazil.

P5.27 PREVALENCE OF *CHLAMYDIA TRACHOMATIS* IN DIFFERENT AGE GROUPS OF WOMEN IN FORTALEZA, BRAZIL

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Introduction *Chlamydia trachomatis* infection is usually asymptomatic, affects young, sexually active women, and when not properly treated, can lead to complications such as pelvic inflammatory disease, infertility, and ectopic pregnancy.

Objectives To evaluate the prevalence of *C. trachomatis* in women classified into different age groups who presented at private clinics in the city of Fortaleza, Brazil. **Methods:** Data from samples of sexually active women who presented at general gynaecology clinics in the city of Fortaleza, Brazil, were processed using the Hybrid Capture method (Digene) for the detection of DNA-*Chlamydia trachomatis* during 2014 and 2015.

Results A total of 11.22% and 8.24% of the women who presented at the clinic were positive for *C. trachomatis* in 2014 and 2015, respectively. In both years, the highest prevalence in different age groups was observed in women 40 years.

Conclusion During 2014 and 2015, the prevalence of *Chlamydia trachomatis* was high in the city of Fortaleza, especially in women.

P5.28 DIAGNOSIS OF BACTERIAL VAGINOSIS WITH AFFIRM VPIII

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Introduction In gynaecology clinics, the most frequently reported women's complaint is associated with vaginitis and vaginosis. The three most common etiologies for vaginal symptoms are bacterial vaginosis (BV), vulvovaginal candidiasis, and trichomoniasis. Carefully recorded histories, examinations,

and laboratory testing to determine the aetiology of vaginal symptoms are warranted. To assess the accuracy of Affirm VPIII in BV diagnosis in women with vaginal discharge.

Methods A cross-sectional study was performed in 73 women (mean age 32+9.7 years) from March to November 2014 in a private gynaecology clinic in the Brazilian city of Fortaleza. All of the women complained of vaginal discharge. After speculum placement, we obtained material from the vaginal wall with a swab and stored it in tubes using the Ambient Temperature Transport System (ATTS). At the same time, another swab was used to collect material for the Gram test (gold standard). The project was approved by Ethical Committee of Federal University of Ceará.

Results The Affirm test identified *Gardnerella vaginalis* in 37/73 cases (50.7%). Comparing the results from the Affirm test with Gram staining for BV indicated that the sensitivity for the Affirm test was 83.3%, the specificity was 62.2%, and the positive and negative predictive values were 20.8% and 97.1%, respectively. The Kappa index between the tests was 0.204, which was considered a fair degree of agreement.

Conclusion The Affirm test appears to be sensitive enough to diagnose BV with satisfactory specificity for *G. vaginalis*.

P5.29 AWARENESS AND INTEREST IN PRE-EXPOSURE PROPHYLAXIS (PREP) AMONG YOUNG MEN ATTENDING A PUBLIC SEXUALLY TRANSMITTED DISEASES (STD) CLINIC IN A HIGH PREVALENCE URBAN SETTING

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Introduction Young men who have sex with men (YMSM), especially African American YMSM, are disproportionately affected by HIV. Pre-Exposure Prophylaxis (PrEP) is a highly effective biomedical intervention that could prevent new HIV infections among YMSM. We assessed awareness and interest in PrEP among young men receiving care at the Baltimore City Health Department (BCHD) Sexually Transmitted Diseases (STD) Clinics.

Methods We surveyed a convenience sample of 252 men ages 18–24 who attended BCHD clinics between 4/12/2016 and 10/3/2016. Participants were provided a self-administered survey that assessed awareness and interest in PrEP. Univariate and multivariable logistic regression analysis examined predictors of awareness and interest. Data collection continues to determine if awareness and interest change over time.

Results Mean age was 21.5 (SD=1.98) and the majority (93.7%) self-identified as African American. Thirty-three participants (13.1%) reported sex with other men. Among all participants, 19.4% were aware of PrEP, and 44.4% were interested in learning more about PrEP. Among YMSM, 72.7% were aware of PrEP, 63.6% were interested in learning more about PrEP, and 9.1% reported current PrEP use. No current PrEP use was found in young men who did not report sex with men. In multivariable analysis adjusting for race, YMSM were more likely to be aware (AOR=19.9, $p<0.001$) and interested in PrEP (AOR=2.5, $p=0.023$) than young men who did not report sex with other men. Among YMSM, 37.5% reported learning about PrEP from healthcare providers, 36.4% from friends or sexual contacts, and 24.2% from media (internet, television, phone apps).

Conclusion YMSM receiving care at the BCHD STD Clinics are likely to be aware and interested in PrEP but fewer than 10% may be taking PrEP. Given that STD Clinics serve primarily minority young males who are disproportionately affected by HIV, future work should seek to improve youth-friendly services at public health clinics and leverage awareness and interest in PrEP in order to improve uptake in this vulnerable population.

P5.30 ACCEPTABILITY OF PRE-EXPOSURE PROPHYLAXIS IN GAY MEN AND OTHER MSM IN GUATEMALA CITY

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Introduction Pre-exposure prophylaxis (PrEP) is one the most promising HIV interventions, with more than 90% efficacy with consistent adherence. In Guatemala, after more than 10 years of highly financed interventions, MSM continues to be one of the most affected populations for HIV epidemic. Other interventions, mostly behavioural, haven't changed the course of the HIV epidemic in these population. Our objective was to determinate the acceptability of PrEP in gay men and other MSM in Guatemala city.

Methods Exploratory qualitative study was performed between October and December 2015. 15 MSM were interviewed. Semi-structured interview of 23 questions regarding: sociodemographic, risk scale, sexual practices and PrEP knowledge. Barriers and facilitators for PrEP were also asked. All participants signed an informed consent. Data analysis was performed on Atlas.Ti.

Results Median of age 32 years old, most of the participants reported higher education. Based on CDC guidelines for PrEP, 10 of the participants should be offered PrEP based on their current risks. Condom use was high, and for 3 participants that will be the preferred option always. 13 of them were likely to start PrEP if available, with fears about side effects and cost of the medications. Facilitators for PrEP consumption was low cost, accessibility of the delivery point, counselling and knowledge about PrEP. To improve adherence, participants recommended phone alarms, text messages, extra pills, flexible or accessible hours for the service.

Conclusion PrEP has a high acceptability among MSM population in Guatemala city. Facilitators and barriers mentions will help to design a successful demonstration project. Based on the reported risks and HIV prevalence in this population, PrEP is an effective needed intervention in these country that can help to change the course of the epidemic. Based on these results, we have started a small fee-based demonstration project since 2016.

P5.31 SAFETY AND ACCEPTABILITY OF CELLULOSE SULFATE AS A VAGINAL MICROBICIDE IN HIV-INFECTED WOMEN

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Introduction Few studies of topical microbicides have assessed their safety in HIV-infected women. We conducted this study to evaluate the safety and acceptability of 6% cellulose sulfate

(CS) gel as a vaginal microbicide in sexually abstinent and active HIV-infected women.

Methods Fifty-nine HIV-infected women were enrolled in a randomised double-blind placebo-controlled study comparing 6% CS to placebo gel used for 14 days. Sexually abstinent women applied gel once or twice daily and sexually active women used gel once daily.

Results CS gel was safe with no reported severe or life-threatening adverse events (AE). Thirty-nine (66%) of the participants experienced urogenital AE judged as probably or possibly related to gel. The majority (51%) of these participants reported only mild events. Fewer women (62%) who used CS experienced urogenital AE than those assigned to placebo gel (70%) ($p=0.59$). Eleven (19%) women experienced intermenstrual bleeding judged to be probably or possibly related to gel use (four in the CS and seven in the placebo gel group). There was no increase in AE by frequency of gel use - sexual activity with the exception of abdominal/pelvic pain which was noted more frequently with twice daily use among sexually abstinent women. Women and men found the gel highly acceptable.

Conclusion This Phase I study demonstrated that CS vaginal gel was safe, well tolerated and acceptable by HIV-infected women and their male partners. Thus, further development of CS is warranted as a potential method to prevent HIV transmission and acquisition.

P5.32 BACTERIAL VAGINOSIS AS A RISK FACTOR FOR ACQUIRING SEXUALLY TRANSMITTED DISEASES

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Introduction Few studies have demonstrated that Bacterial vaginosis (BV) is associated with sexual behaviour risk factors similar to those for other sexually transmitted diseases. In the present study, the prevalence of these in a multivariate analysis of data from sexually active women infected with BV and either *Chlamydia trachomatis* (CT), *Treponema pallidum* (syphilis), *Neisseria gonorrhoeae* (NG) or HIV was observed; Non-BV infected women were used as control subjects.

Methods Data from 788 women screened in the SAVVY HIV gel phase III clinical trial in Accra (West Legon Study Site) from 2012 to 2015 were analysed. Participants were evaluated for the presence of BV, CT, *Treponema pallidum* (PT), NG, *Trichomonas vaginalis* (TV) and Human Immunodeficiency Virus (HIV), and interviewed in detail with respect to sexual behaviours after consent forms were signed.

Results This study has shown a high association between BV and HIV ($p<0.01$) with risk factor (0.4), which does not occurred in the other sexually transmitted diseases like NG, syphilis and *Chlamydia* with insignificant association ($p<1$) and risk factors (0.6, 0.7, 0.9) respectively. HIV was found to be the most prevalent sexually transmitted disease with 11.2%, *Chlamydia* 9.2%, TV 2.3%, Syphilis 1.7% and NG the least with 1.5%.

Conclusion Bacteria associated with bacterial vaginosis increase female genital-tract infection of HIV but the mechanism by which this happens is not clear. Bacterial vaginosis is not a sexually transmitted disease but predisposes one to HIV infection. It is strongly suggested that all cases of BV both symptomatic and asymptomatic that are presented in the sexual-

health clinics should be treated to reduce the risk of PID, pre-term delivery, and/or HIV transmission.

P5.33 ABSTRACT WITHDRAWN

P5.34 HIGH PREVALENCE OF SEXUALLY TRANSMITTED INFECTIONS AMONG WOMEN SCREENED FOR CONTRACEPTIVE INTRAUTERINE RING STUDY, KISUMU KENYA, 2014

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Introduction World Health Organisation global estimates for sexually transmitted infections (STI) stand at 448 million new cases per year with the greatest burden occurring in sub-Saharan Africa. We assessed prevalence and correlates of herpes simplex virus type 2 (HSV-2), bacterial vaginosis (BV), gonorrhoea, syphilis, chlamydia and HIV infection among Kenyan women 18–34 years of age screened for a contraceptive vaginal ring study

Methods Women provided socio-demographic, medical information, and underwent real-time rapid HIV testing, STI testing using vaginal swabs and pelvic examinations. Log-binomial regression model was used to compute adjusted prevalence ratios (PR).

Results Out of 463 women screened, 457 were included in the analysis. Median age was 25 IQR (21–28) and 67% had completed primary education. Overall, 71.3% tested positive for any STI, including HIV. Prevalence of HSV-2, BV, and HIV were 54.9%, 30.0% and 14.5% respectively; 18.1% were co-infected with all STIs. STI prevalence increased with age and peaked among those 30–34 years (PR=1.26; 95% CI, 1.06, 1.48). Early age at first sex (<14 years) was associated with a 27% increase in STI prevalence compared to those who initiated sexual activity at ages 17–19 (PR=1.27; 95% CI, 1.07, 1.51). History of transactional sex, and sexual intercourse in the last 7 days were associated with a prevalent STI (PR=2.05; 95% CI, 1.07, 3.92) and (PR=1.17; 95% CI, 1.01, 1.36), respectively. Women reporting one lifetime sexual partner were 30% less likely to test positive for any STI compared to women with 4 or more lifetime sexual partners (PR=0.70; 95% CI, 0.54, 0.92).

Conclusion Multiple prevention strategies, including dual protection from pregnancy and STIs, are needed in this setting.

P5.35 ACCEPTABILITY OF CARRAGUARD VAGINAL GEL USE AMONG UGANDAN COUPLES (VIRGINAL MICROBICIDE ACCEPTABILITY)

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Introduction To evaluate the acceptability of candidate microbicide Carraguard among couples participating in a safety trial.

Methods A 6 month randomised, placebo - controlled trial was conducted in active, low-risk couples in Uganda. Couples who were monogamous, HIV uninfected, and not regular

condom users were enrolled. Acceptability data were collected through structured question at repeated intervals. At the closing study visit, participants were asked questions about hypothetical product characteristics and future use. Compliance with gel use was assessed by questionnaires, coital diaries, and tracking of used and unused applicators.

Results Among 55 enrolled couples, follow up and adherence with gel use were high and sustained, with 80% of women using gel in over 95% of vaginal sex acts. Because acceptability results from Carraguard and placebo arms were similar, they were combined for this analysis. Overall, 92% of women and 83% of men liked the gel somewhat or very much; 66% of women and 72% of men reported increased sexual pleasure with gel use; and 55% of women and 62% of men reported increased frequency of intercourse. Only 15% of women but 43% of men thought that gel could be used without the man knowing. Although men and women had similar views overall, concordance within couples was low, with no kappa coefficients above 0.31.

Conclusion Carraguard gel use was acceptable to low-risk couples in western Uganda. Reported associations between gel use and increased sexual pleasure and frequency suggest a potential to market microbicide products for both disease prevention and enhancement of pleasure.

LB5.36 PREVALENCE, INCIDENCE AND CORRELATES OF HSV-2 INFECTION IN AN HIV INCIDENCE ADOLESCENT AND ADULT COHORT STUDY IN WESTERN KENYA

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Introduction Herpes Simplex Virus Type 2 (Hsv-2) Infections Are Associated With Increased Risk Of Hiv Transmission. We Determined Hsv-2 Prevalence, Incidence And Associated Risk Factors, Incidence Among Persons With Indeterminate. Results, And Prevalence Of Hsv-2/Hiv Co-Infection Among Persons Aged (18–34 Years) And (16–17 Years) Enrolled In An Hiv Incidence Cohort Study In Western Kenya.

Methods Participants (n=1106; 846 Adults) Were Screened And If Hiv-1 Negative, Enrolled And Followed-Up Quarterly For One Year. Hsv-2 Was Assessed Using The Kalon Enzyme Immunoassay. Hsv-2 Incidence Was Calculated Among Hsv-2 Seronegative Participants And Those Indeterminate At Baseline. Logistic Regression Was Used To Estimate The Odds Of Hsv-2 Infection And Poisson Regression Assessed Hsv-2 Incidence And Associated Factors.

Results Hsv-2 Prevalence Was 26.6% [95% Confidence Interval (Ci):23.9–29.4] And Higher In Adults (31.5% [95% Ci:28.3–34.9]) Than Adolescents (10.7% [95% Ci:7.1–15.3]). Factors Associated With Prevalent Hsv-2, Female Gender, Increasing Age, Hiv Infection, History Of Sexually Transmitted Infection, Low Education Level, Multiple Sexual Partners, And Being Married, Divorced, Separated Or Widowed. Overall Hsv-2 Incidence Was 4.0/100 Person-Years (/100py) 95% Ci:2.7–6.1 And Higher In Adults (4.5/100py) And Females (5.1/100py). In Multivariable Analysis Marital Status Was Associated With Hsv-2 Incidence. Of 45 Participants With Indeterminate Hsv-2 Results At Baseline, 22 seroconverted, Resulting In An Incidence Rate Of 53.2/100py [95% Ci:35.1–80.9]. Inclusion Of Indeterminate Results Almost Doubled The Overall Incidence Rate To 7.8/100py [95% Ci:5.9–10.5].