

risk of developing BV (AHR=0.99 95% CI 0.098–1.00,  $p=0.038$ ). The vaginal microbiome of women who developed BV was characterised by high microbial diversity and less stability compared to controls ( $p=0.04$ ).

**Conclusion** In a cohort that was designed carefully to study incident BV, lower abundance of *L. crispatus*, increased abundance of *G. vaginalis*, and detection of BVAB TM7 were significantly associated with development of BV, after adjusting for bacterial species and sexual behaviour. Increased vaginal microbial diversity, decreased stability and exposure to new sexual partners were also associated with the development of BV in WSW. Incident BV may result from sexual exchange of key BV-associated bacteria such as *G. vaginalis* which could destabilise the microbial ecology through displacement of beneficial bacteria such as *L. crispatus*.

## P2.09 KNOWLEDGE OF MICROBICIDE AMONG COMMERCIAL SEX WORKERS IN NAIROBI KENYA

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**Introduction** To determine the current knowledge of Microbicide and its future usage among Commercial Sex Workers who are exposed to unproductive sex. Also to assess how Microbicide could affect their sexual behaviours.

**Methods** Self administered Questionnaires among 55 respondents were used in a cross sectional way to investigate how they will take Microbicide as a preventive measure. This survey was conducted in the month of August-September 2015.

**Results** 58.5% of the respondents have never heard of Microbicide while 41.5% of the respondents have heard of Microbicide. The respondents in both cases were sexually active. The acceptance of Microbicide among the respondents was 80.2% if administered by a medical personnel advise while 19.8% of the respondents were ready to use immediately without an advice of a medical personnel advise. 2.1% of the respondents were not sure whether to use Microbicide or not since they didn't know the side effects of the Product and its reliability on prolonged usage and they preferred condom use ALWAYS.

**Conclusion** To meet Commercial Sex Workers (CSW) needs, more information and knowledge should be made available to them through awareness creation campaigns, web pages of Commercial sex workers etc. Also easy to use methods of Microbicide should also be put in place which is to be conducted by a medical expert to avoid misuse of the Product. However, for most of the respondents, Microbicide is most acceptable method of Prevention and they could use more frequently than condom usage.

## P2.10 WHAT IS THE ROLE OF PAIRED RPR TESTING IN THE DIAGNOSIS OF SYPHILIS REINFECTION AND THE FOLLOW UP OF SYPHILIS?

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**Introduction** Syphilis reinfections are playing an increasing role in syphilis transmission in a number of populations. The

assessment of reinfection and response to treatment depends on accurately measuring intraindividual changes in non-treponemal tests (delta-NTTs). In a 0 to 6 month delta-RPR determined by routine RPR testing (RT), samples would be tested 6 months apart with differences in reagent batches, environmental temperatures and observers all leading to measurement errors. We hypothesised that conducting paired RPR (PT) would enable a more accurate determination of delta-RPR than RT.

**Methods** 120 patients with a new diagnosis of syphilis were followed up at 0,3,6,9,12,18 and 24 months with RPRs performed via RT at each study visit and at any suspected reinfection. RPR PT was performed at 0 and 6 months and at any suspected reinfection.

**Results** The quantitative agreement  $\pm 1$  dilution among PT and RT was 97.4%. There was no difference in the proportion with an incomplete serological response at 6 months: 21 (19.4%) and 19 (17.6%) according to PT and RT, respectively ( $p=0.726$ ). There was no statistically significant difference between 0 to 6 month delta-RPR as determined by PT and RT in predicting seroresponse at 12 months (86.1% and 91.6% agreement with 12 month classification, respectively,  $p=0.262$ ). PT did not reduce the numbers of those classified with asymptomatic reinfections.

**Conclusion** In our setting routine PT is unlikely to be worth the considerable effort and cost it entails. Further research is required to assess its utility in specific circumstances.

## P2.11 ASSOCIATION BETWEEN GENITAL HERPES SIMPLEX VIRUS TYPE-2 SHEDDING AND PRESENCE OF BACTERIAL VAGINOSIS-ASSOCIATED BACTERIA

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**Introduction** Herpes simplex virus type 2 (HSV-2) infection increases the risk of bacterial vaginosis (BV). We hypothesised that the biologic mechanism of this association is that genital HSV-2 shedding increases inflammation, resulting in increased presence and quantity of BV-associated bacteria (BVAB).

**Methods** HSV-2 seropositive women with a clinical history of BV in the past 12 months collected daily genital swabs for HSV detection and vaginal swabs for Nugent score and analysis of the microbiome for 28 days. BV was defined as Nugent score  $\geq 7$ . Quantitative PCR (qPCR) with species specific primers for *Lactobacillus crispatus*, *L. iners*, *L. jensenii*, *Gardnerella vaginalis*, *Megasphaera* and BVAB-2 were performed. HSV was detected using real-time qPCR. The presence of each bacterial species was compared on days with and without HSV shedding using Poisson regression.

**Results** Forty-eight women (median age 40; 48% white) with a median of 2 genital HSV-2 recurrences in the prior year (range 0–12) were enrolled for a total of 1277 days of observation. Genital HSV shedding was detected on 134 (10%) days. Of 960 days with Nugent score available, BV was present on 351 (37%) days. The risk of BV was not significantly different in the presence of HSV shedding (RR=0.84, 95% CI=0.66–1.07). Several bacterial species appeared to be detected more frequently on days with HSV shedding as

compared to days without shedding (*L. crispatus*: 53% vs. 44%, *L. jensenii*: 56% vs. 49%, *Megasphaera*: 58% vs. 41%, BVAB-2: 49% vs. 37% of days, respectively), although these findings were not statistically significant. The study is 80% completed; data for at least 12 additional women is anticipated, which will provide additional statistical power.

**Conclusion** Genital HSV-2 shedding may be associated with dynamic shifts in the vaginal microbial community and may increase the presence of BVAB. A study to assess whether the use of suppressive treatment for HSV (daily valacyclovir) decreases the presence of BVAB, or BV (twice weekly metronidazole) decreases HSV shedding, is ongoing.

## P2.12 DIFFERENCES IN UPTAKE, CHARACTERISTICS, AND TESTING HISTORY OF CLIENTS OF GETCHECKEDONLINE DURING SCALE-UP TO URBAN, SUBURBAN AND RURAL COMMUNITIES IN BRITISH COLUMBIA, CANADA

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**Introduction** In Sept 2014, the BC Centre for Disease Control (BCCDC) launched GetCheckedOnline (GCO), an online testing service for STI/HIV which is integrated with clinical and public health services and developed to reduce testing barriers. Based on a successful pilot in urban Vancouver (BC's largest city) and alignment with regional health authority testing priorities, GCO was expanded to five other urban, suburban and rural communities across BC in Feb 2016. Here we examine differences in GCO uptake between Vancouver and expansion sites from the first year of scale-up in British Columbia (BC).

**Methods** We used routinely collected GCO program data in combination with BC Public Health Laboratory testing data to describe differences between GCO clients in Vancouver and expansion sites. We compared demographic characteristics and testing history as well as key program measures including service uptake (percent creating a GCO account who submitted specimens) and positivity rates (percent positive of specimens submitted).

**Results** Between Feb-Dec 2016, of 2397 clients creating accounts, 1297 (54%) submitted specimens; uptake was slightly lower in expansion sites (577 specimens, 51%) vs. Vancouver (720, 57%;  $p=0.001$ ), with comparable positivity rates (6% vs. 5%;  $p=0.77$ ). Compared to Vancouver, GCO clients in expansion sites were more likely to be younger (20–24 years of age) (20% vs. 13%) and symptomatic (20% vs. 14%), and less likely to be men who have sex with men (22% vs. 42%;  $p\leq 0.001$  for all). GCO clients in expansion sites were more likely to be testing for the first time for both HIV (22% vs. 9%) and STI (16% vs. 9%;  $p<0.001$ ).

**Conclusion** Scale-up of GCO to five smaller urban, suburban and rural communities across BC demonstrated differences in uptake and populations reached, including greater engagement of individuals not previously tested. Our study highlights the importance of differing regional contexts on the impact of online testing services and the need for their evaluation during scale-up.

## P2.13 BACTERIAL VAGINOSIS: LEADING CAUSE OF VAGINAL DISCHARGE AMONG WOMEN ATTENDING SEXUALLY TRANSMITTED INFECTION CLINIC IN KUMASI, GHANA

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**Introduction** Vaginal discharge is the most common complaint of women who seek services in the various units in the health delivery system including in most parts of the world. We determine the aetiology of vaginal discharge in women patronising Sexually Transmitted Infection (STI) Clinic in Kumasi, Ghana as a follow up to similar study in 2006.

**Methods** Specimen for wet mount preparation, pH determination, whiff test, Gram's stain, culture and polymerase chain reaction were collected from the vagina and the cervix of 500 women: 250 sex workers (SW) and 250 non-sex workers (NSW), attending Suntreso STI Clinic in Kumasi, Ghana with complaint of vaginal discharge on their first attendance. Details regarding demographics, symptoms and signs as well as sexual behaviour were recorded. Associations of these factors with each infection were determined and adjusted for other risk factors.

**Results** 39.4% had bacterial vaginosis (197/500,  $p=0.000$ , SW-114/250 {45.2%}; NSW- 83/250{33.2%}, 29.1% with *Candida* species (145/500:  $p=0.000$ , SW- 67/250{26.7%}; NSW-78/250{31.2%}), 4.5% with *Trichomonas vaginalis* (23/500:  $p=0.000$  SW-18/250{7.1%; NSW- 5/250{2.0%}.), 3.1% with *Chlamydia trachomatis* (16/500:  $p=0.001$  SW-12/250{4.8%}; NSW-4/250{1.6%}), 2.2% with *Neisseria gonorrhoeae* (11/500:  $p=0.014$ , SW- 8/250{3.2%}; NSW- 3/250{0.8%}) and 3.0% with *Mycoplasma genitalium* (15/500, 3.0%,  $p=0.000$ , SW-10/250{4.0%};NSW-5/250{2.0%}).

**Conclusion** The study found bacterial vaginosis the most predominate aetiological agent of vaginal discharge among women in Kumasi Ghana with an increase in prevalence from 37.8% in 2006 to 39.4% in 2016. The result confirms the existing literature, making the inclusion of bacterial vaginosis in the syndromic management of STI still relevant.

## P2.14 THE EFFECT OF FOLLICULAR VERSUS LUTEAL PHASE MENSTRUAL CYCLE TIMING ON GENITAL HERPES SIMPLEX VIRUS-2 SHEDDING AND LESIONS

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**Introduction** The effect of female sex hormones on the natural history of herpes simplex virus (HSV) is poorly understood. Studies suggest that vaginal immunity varies throughout the menstrual cycle, with increased inflammatory cytokines and decreased innate immune factors observed during the luteal (post-ovulatory) phase. Whether HSV shedding or presence of genital lesions vary throughout the menstrual cycle is unknown.

**Methods** We studied HSV-2 seropositive women enrolled in prospective studies of genital herpes at the University of Washington Virology Research Clinic. Participants were eligible if they had established HSV-2 infection, performed daily genital swabbing for HSV DNA, recorded a menstrual diary, and