study was aimed to determine the prevalence and risk factors associated with *T. vaginalis* among asymptomatic undergraduate students at Babcock University, Ilisan-Remo, Ogun State, Nigeria.

Methodology Descriptive cross-sectional study involving 123 female and 123 male students of Babcock University was done from February 2019 to April 2020. The institution's ethical committee approved the study. Information regarding demographics, behavioural and sexual characteristics was obtained from consenting participants using questionnaire. First-void urine samples were collected from each participant for the detection of *T. vaginalis* using the traditional wet preparation method and TV in-pouch. The data were analyzed by using IBM SPSS version 23.

Result The prevalence of *T. vaginalis* among the participants was 12.2% (30/246) using TV in-pouch and 8.5% (21/246) using the traditional wet preparation method. This differential rate was statistically significant. The prevalence rate was slightly higher among females 53.3% (16/30) compared to males 46.7% (14/30). Excessive alcohol intake and low condom use lost their significance on multivariate analysis while there was no significant association with prior STI. Recent sexual intercourse (OR= 22.26, 95% CI: 4.73–104.65), use of hormonal contraceptives (OR= 0.07, 95% CI: 0.006–0.742) and internet-based sex seeking behaviour (OR=31.17, 95% CI: 2.59–375.19) had increased likelihood of *T. vaginalis* infection on multivariate analysis.

Conclusion The occurrence of *T. vaginalis* among the asymptomatic population in this study is very high. Associated risk factors identified may be helpful for counseling, screening and management of patient.

P064

EVALUATION OF CHLAMYDIA TRACHOMATIS POSITIVE SPECIMENS ESCAPING DETECTION IN THE APTIMA COMBO 2 ASSAY IN THE UNITED STATES

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Background The Aptima Combo 2[®] (AC2, Hologic) assay detects Chlamydia trachomatis (CT) and Neisseria gonorrhoeae in clinical specimens. The assay target for CT is a region within the 23S ribosomal RNA (rRNA). Recent international reports highlighted a failure to detect CT variants with nucleotide substitutions in the AC2 target region. We explored the presence of CT 23S variants in the United States and whether a redesigned AC2 assay would successfully detect them.

Methods A total of 50 specimens (tested using the AC2 assay between December 2019 – February 2020) with CT-negative or equivocal results (and having relative light unit (RLU) signal ≥ 15 –99) were selected for further analysis. Additional specimens (RLU <15 [n=300], RLU >100 [n=51]) were also examined. A custom real-time PCR was used to detect CT DNA in these samples and a portion of the CT 23S rRNA gene was amplified and sequenced. Samples were then tested using a redesigned AC2 assay provided by the manufacturer as research use only (RUO) reagent.

Results All samples with AC2 results <15 RLU were CT-negative by real-time PCR. A subset of five AC2 CT-positive samples with 100+ RLU were sequenced, which confirmed wild-type 23S rRNA sequences. CT DNA was detected in seven of the 50 specimens with ≥ 15 –99 RLU by PCR. Four of these specimens contained wild-type CT 23S rRNA sequences and two separately contained previously unreported 23S rRNA mutations (A1518G, G1526A). The redesigned AC2 assay detected 22 previously CT-negative or equivocal specimens, including six (four wild-type 23S rRNA, two variant 23S rRNA) of the seven identified by real-time PCR.

Conclusions Our findings show the redesigned AC2 assay is able to detect 23S rRNA point mutation variants that were not detected by its predecessor. Neither of these variant strains were associated with recent reports of diagnostic escape mutants in Europe.

P065

QUICK ONLINE STI RISK-ASSESSMENT QUESTIONS FOR ASYMPTOMATIC YOUNG PEOPLE: THE COMPUTER SAID I SHOULD GET TESTED

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Background Both healthcare providers and clients identify barriers to sexually transmissible infections (STI) testing associated with time, embarrassment, anxiety or stigma. Online testing options are one mechanism to address some of these constraints and engage people who prefer technology facilitated processes.

Methods Queensland Health in Australia offers a free chlamydia and gonorrhoea urine test and uses four STI risk-assessment questions with yes/no answers to guide client decisions whether to continue to use the online service to order a Webtest. The STI risk-assessment generates high, medium and low-risk categories with messages recommending where or how to get tested. Data was extracted from the Webtest system on 3 August 2020 about the online activity since 3 August 2017 and tests ordered between 3 August 2017 and 30 June 2020.

Results For the high-risk category, the online message recommends testing at a clinic and many people who chose not to order a Webtest (56.0%, 2418/4320) were in this category. The majority of Webtest orders (57.2%, 3401/5943) were made from a medium-risk outcome where the online message recommends testing. Very few testing requests are received from people classified as low-risk (0.3%, 20/5943).

For people with valid STI results (n=3737), the risk-assessment was effective in identifying increased risk. Chlamydia positivity rates were 11.6% for high (166/1429, 95% CI 10.1–13.4), 4.4% for medium (101/2296, 95% CI 3.6–5.3), and no positive results received for those with low-risk outcome scores (0/12).

Conclusion While not intended as a stand-alone intervention, a personalised internet-based self-assessment tool enabling a

quick STI risk-assessment may help people to seek testing. An online self-assessment can enhance privacy and confidentiality, empower clients, and is likely to appeal to more technology confident groups such as young people.

P067

TIMING OF PRIMARY SYPHILIS TREATMENT AND IMPACT ON THE DEVELOPMENT OF TREPONEMAL ANTIBODIES: A CROSS-SECTIONAL CLINIC-BASED STUDY

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Background Serology is negative in a proportion of primary syphilis cases where *Treponema pallidum* polymerase chain reaction (PCR) testing is positive. We aimed to identify discordant, T. pallidum PCR-positive, serology negative primary syphilis cases and any clinical or laboratory factors associated with failure to subsequently seroconvert.

Methods Serodiscordant primary syphilis cases that were T. pallidum PCR positive and serology negative (including rapid plasma reagin, T. pallidum particle agglutination, T. pallidum enzyme immunoassay or T. pallidum chemiluminescence assay) were identified from the Melbourne Sexual Health Centre electronic records between April 2011 and December 2019. Clinical and laboratory associations were examined.

Results There were 814 primary syphilis cases in the study period and 38 (4.7%) were serodiscordant, 35 in men who have sex with men. Thirty-two had follow-up serology performed a median of 24 days later, of which 16 (50%) seroconverted, mostly (81%) within six weeks. Failure to seroconvert was significantly associated with treatment on day 1. Of the 12 cases treated on day 1, 10/12 (83%) failed to seroconvert compared to 6/20 (30%) among those who were treated after day 1.

Discussion Earlier treatment of primary syphilis can prevent the development of serological markers. T. pallidum PCR can identify primary syphilis lesions before the development of serological markers and improve diagnosis of early primary syphilis lesions. Serology alone will miss a proportion of primary syphilis infections and should be repeated if a diagnosis of syphilis is being considered.

P069

THE EPIDEMIOLOGY OF HERPES SIMPLEX VIRUS TYPE 2 IN SUB-SAHARAN AFRICA: SYSTEMATIC REVIEW, META-ANALYSES, AND META-REGRESSIONS

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Background Herpes simplex virus type 2 (HSV-2) infection is a prevalent sexually transmitted infection with a sizable disease burden that is highest in sub-Saharan Africa. This study aimed to characterize HSV-2 epidemiology in this region.

Methods Cochrane and PRISMA guidelines were followed to systematically review, synthesize, and report HSV-2 related findings. Meta-analyses and meta-regressions were conducted.

Results From 218 relevant publications, 451 overall outcome measures and 869 stratified measures were extracted. Pooled incidence rates ranged between 2.4–19.4 per 100 person-years across populations. Pooled seroprevalence was lowest at 37.3% (95% confidence interval (CI): 34.9–39.7%) in general populations and high in female sex workers and HIV positive individuals at 62.5% (95% CI: 54.8–70.0%) and 71.3% (95% CI: 66.5–75.9%), respectively. In general populations, pooled seroprevalence increased steadily with age. Compared to women, men had a lower seroprevalence with an adjusted risk ratio (ARR) of 0.61 (95% CI: 0.56–0.67). Seroprevalence decreased in recent decades with an ARR of 0.98 (95% CI: 0.97–0.99) per year. Seroprevalence was highest in Eastern and Southern Africa. Pooled HSV-2 proportion in genital ulcer disease was 50.7% (95% CI: 44.7–56.8%) and in genital herpes it was 97.3% (95% CI: 84.4–100%).

Conclusions Seroprevalence is declining by 2% per year, but a third of the population is infected. Age and geography play profound roles in HSV-2 epidemiology. Temporal declines and geographic distribution of HSV-2 seroprevalence mirror that of HIV prevalence, suggesting sexual risk behavior has been declining for three decades. HSV-2 is the etiological cause of half of GUD and nearly all genital herpes cases.

P070

EPIDEMIOLOGY OF HERPES SIMPLEX VIRUS TYPE 2 IN LATIN AMERICA AND THE CARIBBEAN: SYSTEMATIC REVIEW, META-ANALYSES, AND META-REGRESSIONS

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Background Herpes simplex virus type 2 (HSV-2) infection is a sexually transmitted infection of global concern. This study