ulcer swabs, skin biopsies, and rabbit-passaged clinical isolates was enriched for Tp using pooled, parallel whole-genome amplification and/or RNA baits before Illumina short-read sequencing. We adopted hybrid comparative genome assembly analysis that involved de novo and reference-based assembly strategies to generate whole-genome consensus sequences. Repetitive and paralogous loci are being finished using Oxford Nanopore Technologies long-read sequencing and outer membrane protein (OMP) variability assessed using three-dimensional structural modelling.

Results We whole-genome sequenced 20 newly collected strains and analyzed publicly available sequencing data from 605 Tp samples. We observed a higher proportion of Nichols-like strains (6 of 20 [30%]) than expected in newly sequenced samples. Macrolide resistance-associated 23S rRNA alleles were not observed in samples from Columbia or Malawi. Initial analysis of bamA, lptD, and fadL-like loci suggests a spectrum of OMP variability that supersedes clade assignment. Analyses of newly collected samples and publicly available genomes is ongoing.

Conclusion Sampling from geographically diverse sites suggests that Tp strains are more genetically diverse than previously appreciated. Nichols and SS-14 clades were well represented, and macrolide susceptibility was maintained in some localities. Representative sampling complemented by analysis of robust clinical data and paired biological samples is critical to the development of a globally effective syphilis vaccine.

020.5 LOVE IN LOCKDOWN: RELATIONSHIP STRESS, DATING VIOLENCE AND STI RISK IN ADOLESCENT AND YOUNG ADULT RELATIONSHIPS DURING THE COVID-19 PANDEMIC

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Background Adolescents and young adults (AYA) who experience dating violence (DV) are at increased STI risk. Social restrictions during the COVID-19 pandemic have stressed AYA relationships and may cut them off from sources of support. AYA have been shown to respond to relationship stressors with behaviors that increase STI risk. This work examines whether relationship stressors (jealousy and worry about the relationship) exacerbate violence and STI risk among urban AYA during the COVID-19 pandemic.

Methods Participants from four sexual and reproductive health studies in Baltimore, Maryland (USA) were invited to complete a cross-sectional telephone survey on relationship experiences/sexual behavior during the pandemic. March 16, 2020 'stay-at-home' order was used to define the pandemic period. Partner support, jealousy, worry about the relationship making it through the pandemic, current DV, change in DV during pandemic, and condom use at last sex were evaluated using regression analyses. Data collection is still underway in 2021.

Results Of 194 participants surveyed, mean (sd) age 22.7 (2.8) years, 61% were in a romantic/sexual relationship. Of these, 14% reported current TDV, 6% experienced an increase in DV, 66% did not use a condom at last sex. AYA who worried

their relationship would not make it through the pandemic were more likely to experience DV (OR: 5.64, 95%CI: 1.69, 18.9). AYA who felt jealous of other people their partner was talking to/hanging out with during the pandemic were more likely to experience DV (OR: 4.51, 95%CI: 1.39, 14.6). Greater partner support was associated with experiencing less DV (OR: 0.71, 95%CI: 0.56, 0.90). Relationship stressors were not associated with condom use.

Conclusions Relationship insecurity exacerbated by the COVID-19 pandemic may increase risk for DV among AYA. As DV and STI are interconnected, romantic relationship context must be a key focus of STI prevention strategies during and after the pandemic.

020.6 CHLAMYDIA TRACHOMATIS VIABLE LOAD AT SIX DIFFERENT ANATOMICAL SAMPLE SITES IN WOMEN (CHLAMOUR)

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Background Nucleic acid amplification tests (NAATs) have revolutionized our ability to diagnose Chlamydia trachomatis (CT). Sometimes, in addition, assessment of CT viability would help to gain more insight in the clinical impact of a positive NAAT. Methods to assess the CT viability have become available in research settings (e.g. viability-PCR; V-PCR). Here we assess viability in six different anatomic sites in women.

Methods Immediately prior to treatment (STI clinic South Limburg), 28 vaginal NAAT-CT-positive (COBAS4800 CT/NG) adult women, were included in the 'CHLAMOUR' study. We used V-PCR to assess CT viable load (log₁₀ CT/ml) in same clinician taken standardized samples from the cervix, vagina, perineum, anus, optional rectum, and pharynx. Mean loads were compared using t-tests.

Results Twenty-eight women were included of whom 68% (19/28) consented to proctoscopic examination (rectal). NAAT-CT-positive rate was 75% for cervix, 79% vagina, 64% perineum, 64% anus, 74% rectum, and 21% for pharynx. Viable load was detected in 90% (19/21) CT positive cervix, 77% (17/22) vagina, 11% (2/18) perineum, 61% (11/18) anal, 93% (13/14) rectal, and 0% (0/6) pharynx samples. The mean viable load was marginally higher in cervical compared to vaginal samples (4.37 [SD:1.35] vs. 3.45 [SD:1.05], p=0.055). Mean viable load was higher in rectal compared to anal samples (3.51 [SD:0.51] vs. 2.70 [SD:0.42], p=0.01). Viable load was 2.72 [SD:1.69] CT positive perineum samples.

Conclusions The amount of viable CT varied by anatomic site, and were highest 'upward in the body', which is thus likely to represent actual site of infection. Still, the vaginal and anal sites (that are usually self-sampled) had high concordance with the cervical and rectal sites. CT at the perineum may indicate

autoinoculation. Notably, the presence of viable CT in anorectal samples indicated the presence of an active anorectal infection, which should be accounted for in comprehensive CT management.

Poster presentations

P023 INTERNET EXPOSURE ON SEXUAL PARTNERS AND SEXUAL RISK BEHAVIOR AMONG SEXUALLY EXPERIENCED COLLEGE MALES: EVIDENCE FROM A POPULATION-BASED STUDY

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Background As a young subgroup, college students have become the main participants of mobile social networks. Considering the increase of HIV infections in male college students, it is important to explore the status of using the internet to meet sexual partners among these young students and examine the correlates of this use with risky sexual behaviors.

Methods A population-based cross-sectional study was conducted among male students from 44 colleges located in Hangzhou. A total of 1045 sexually experienced male students were incorporated in our analysis. Sequential logistic regression models were employed to determine the independent influence of meeting sexual partners via the internet on sexual risk behavior after controlling for factors associated with risk sexual behaviors.

Results Anonymous social software (e.g., Momo, Tantan, Blued and Aloha) were the most common sites (87.6%) for males to seek sexual partners online. The risk sexual behavior was heterogeneous among the aims for finding partners online and the risk was the highest for males who meet partner for sex (75.52%-85.36%). Compared to non-internet partners' seeker, internet partners' seekers tend to have more casual (53.87% vs 10.14%), paid (5.9% vs 2.39%) and homosexual sex (64.39% vs 8.15%), use psychoactive drugs (35.82% vs 12.2%) and more partners. With the increase of HIV/STD knowledge, the probability of having unprotected sex was increasing for internet partner seekers. Meeting sexual partner on internet was statistically associated with unprotected sex (OR=0.255, P<0.05).

Conclusions Meeting sexual partners via the internet were common among male college students, and those meeting partners online exhibited higher levels of risk sexual behaviors although they had enough HIV/STD knowledge, especially students with the aim of finding partners for sex. Thus, more attention should be paid to those general young adults to address the risky sexual behaviors that may contribute to increase HIV spread among this population.

P024 PAINFUL ANO-RECTAL SYPHILIS IN MEN WHO HAVE SEX WITH MEN (MSM)

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There has been a significant increase in infectious syphilis in men who have sex with men (MSM). Recent data also suggests a corresponding increase in ano-rectal syphilis. Despite this, there is a lack of syphilis testing in MSM with ano-rectal symptoms.

The aim of this study is to describe the presentation and management of MSM with ano-rectal syphilis. The sexual health clinic in Brighton sees 6500 MSM per year for sexually transmitted infection testing and treatment. We reviewed the electronic clinic notes of MSM with ano-rectal syphilis from January 2017 to August 2020 and collected data on patient demographics, HIV status, previous syphilis, syphilis serology including VDRL titre, TP-PCR testing and details of treatment.

In the study period, 128 MSM were diagnosed with early syphilis, 108 (84%) with genital lesion(s), 4 (3%) with oral lesion(s) and 16 (13%, 95%CI=7.3–19.5) with painful ano-rectal lesion(s). All 16 had reactive serology and 12/16 had a TP-PCR taken of which 12/12 was positive. The median age was 51 years (IQR 40–58) and 7/16 (44%) were HIV positive and 4/16 (25%) had a previous history of syphilis. Clinicians treated 6/16 (38%) presumptively for syphilis on the day of presentation; the 10/16 who were not treated presumptively on the day waited a median of 8 days (6–28) for treatment. HIV positive MSM with ano-rectal syphilis were significantly more likely to have had previous treated syphilis (OR=24.4, 95%CI 1.03–580.7, p<0.05) than HIV negative MSM, and clinicians were significantly more likely to treat HIV positive MSM presumptively on the day (OR=20.0, 95%CI=1.4–282.5, p<0.03).

We have shown that a small, but significant number of MSM with syphilis present with painful ano-rectal symptoms and suggest that all MSM with ano-rectal symptoms should be tested for syphilis. Point of care testing for syphilis from ano-rectal samples would support syphilis control and prevention.

P025 HIV-1 TRANSMITTED DRUG RESISTANCE BETWEEN 2014 – 2020 IN A HIV LARGE POPULATION IN BRIGHTON, UK

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Background HIV-1 transmitted drug resistance (TDR) is associated with sexually transmitted infections (STIs) and sexual clusters including MSM and non-MSM. TDR can lead to anti-retroviral failure, and therefore UK guidelines recommend TDR testing in all new HIV patients. Subtype B is most common in urbanised western populations however is decreasing in proportion. Within the UK TDR is estimated to be 7.5% and non-B subtype 51%.

Methods Using the WHO TDR list, we aimed to determine from our clinic database; the prevalence of TDR, non-B subtype and associated features in our large tertiary HIV department (~2500 patients) from 2014–2020.

Results Of the 218 new diagnoses, 217 had a resistance test attempted (1 stored due to COVID-19). 212/217 had an available genotype (5 failed to amplify). 191/212 (90%) were MSM, 12/212 (6%) cis-female, 80/212 (38%) non-UK born and the median age was 36 years (IQR=29–46). The overall prevalence of TDR was 17/212 (8%; 95%CI=5.0–12.4), seven