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URINE-BASED CHLAMYDIA AND GONORRHEA SCREENING AMONG ASYMPTOMATIC MEN AT A SEXUAL HEALTH CLINIC, 2011–2019

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Centers for Disease Control and Prevention chlamydia and gonorrhea screening recommendations include at least annual screening for sexually active men who have sex with men (MSM) at site of contact and quarterly for MSM at increased risk. There are no specific recommendations for men who have sex with women (MSW). We examined urine chlamydia and gonorrhea screening positivity among asymptomatic men requesting testing at a sexual health clinic in Seattle, WA to assess current clinic screening policies.

We included asymptomatic patients assigned male sex at birth who had no known contact to chlamydia/gonorrhea who received urine-based chlamydia/gonorrhea screening at the Public Health Seattle-King County Sexual Health Clinic (PHSKC SHC) between 2011–2019. We examined urine screening positivity stratified by MSM and MSW and age group (≤ 30 years and > 30 years). Symptoms and gender of sex partners were obtained from clinic medical records. MSW ≤ 30 were stratified into < 25 years and ≥ 25 years.

Between 2011–2019, there were 12,310 clinic visits for urine chlamydia/gonorrhea screening among asymptomatic men with no known contact to chlamydia/gonorrhea, 22% MSM ≤ 30 (n=2,675), 30% MSM > 30 (n=3,752), 22% MSW ≤ 30 (n=2,755), and 25% MSW > 30 (n=3,128). MSW ≤ 30 (n=98) had the highest chlamydia screening positivity (3.6%, 95%CI 2.9–4.2%), followed by MSM ≤ 30 (n=63) 2.6% (95%CI 2.0–3.2%), MSM > 30 (n=59) 1.6% (95%CI 1.2–2.0%), and MSW > 30 (n=46) 1.5% (95%CI 1.0–1.9%). All groups had $< 1\%$ urine gonorrhea positivity. MSW < 25 and MSW 25–30 had urine chlamydia positivity of 4.7% (95%CI 3.5–5.8%) and 3.1% (95%CI 2.3–4.0%), respectively. Of MSM ≤ 30 with chlamydia/gonorrhea in urine, 66% were positive for the same organism at either the pharynx or rectum. Among MSM > 30 , this proportion was 63%.

Following this analysis, PHSKC SHC changed urine gonorrhea/chlamydia screening recommendations to only recommend asymptomatic MSW < 25 screen once annually. PHSKC SHC recommends against urine-based screening for asymptomatic MSM or MSW ≥ 25 . These findings should prompt a re-evaluation of national screening guidance.

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DISCONTINUATION AND INADEQUATE ADHERENCE TO PRE-EXPOSURE PROPHYLAXIS OF HIV: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background Poor persistence and adherence hamper the maximized benefits of oral pre-exposure prophylaxis of HIV (PrEP). This study aimed to understand the rates and reasons for the discontinuation of PrEP among key populations.

Methods A systematic review and meta-analysis were conducted by searching longitudinal studies from three databases from inception to December 18, 2020. Studies were included if they investigated and presented data on discontinuation or inadequate adherence to oral PrEP. Data were extracted and assessed for quality of evidence was rated according to GRADE approach. We did random-effect meta-analysis. This study was registered with PROSPERO (CRD42020155675).

Findings We identified 87 longitudinal studies with 54,313 individuals across 21 countries (30 studies reported stopping, 28 reported inadequate adherences, and 29 reported both). The PrEP discontinuation rate within six months after initiation was 36.0% (95% CI 20.8–51.3%, I²=99.7). Discontinuation rates in six months after PrEP initiation among various populations: gay, bisexual and other men who have sex with men (GBMSM) (31.3%, 95% CI 13.4–49.3%, I²=99.7), heterosexuals and HIV negative partner in serodiscordant couples (32.6%, 95% CI 8.2–72.5%, I²=99.0), clinical and pharmacy records without pre-specified population (62.7%, 95% CI 57.0–68.5%, I²=39.6). Among GBMSM, the provision of two regimens (daily and on-demand) was associated with a lower rate of discontinuation, compared with the provision of a single regimen (daily) (12.3% vs. 31.4%, P<0.001). The inadequate adherence in six months after initiation remained around 41.1% (95% CI 29.2–53.0%, I²=99.4) among all populations. Seasonal risk and risk perception, side effects, and concerns for long-term side effects were reasons for discontinuation to PrEP.

Interpretation One-third of PrEP users stopped oral PrEP within half year after initiation, while more than one-third were using it with inadequate adherence, which should be addressed by guidelines in implementation, by PrEP providers before initiation, and by the research of intervention and support.

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PREVALENCE AND ASSOCIATIONS OF CONDOM USE AT LAST SEXUAL ENCOUNTER AMONG ADOLESCENTS OF URBAN AND INDIGENOUS-RURAL REGIONS OF PANAMA

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Background Adolescents of urban (URB) and Comarca Ngäbe-Buglé (CNB) regions of Panama have high prevalence of sexually transmitted infection. This research aims to compare condom use at last sexual encounter (condom use) among URB and CNB adolescents and describe demographic and behavioural associations.

Methods Multicentric, school-based, cross-sectional study using two-stage cluster sampling was conducted among adolescents (14–19y) enrolled in public high schools in URB and CNB. Participants completed a self-administered questionnaire which included sociodemographic and sexual behaviours questions. Condom use associations were found using random-effects logistic regression.

Results A total of 3168 participants (1721 male, 1447 female), median age 17y (IQR:15.9–18.1) were included. Sexual experience was reported by 59.9% of females and 63.8% males (p=0.02). Condom use at last sexual encounter was reported by 13.9% of participants. Participants in URB were more

likely to use a condom than those in CNB (14.1% vs 5.5%, [age adjusted] AOR=0.32, 95%CI:0.18–0.56). In URB, condom use was associated with being male (16.7% vs 12.2% female, [age/region adjusted] AOR=1.47, 95%CI:1.12–1.94) and weakly associated with being older (16.5% among 17–19y vs 12.9% among 14–16y, AOR=1.27, 95% CI: 0.97–1.68, $p=0.08$). In CNB, condom use was associated with being female (10.5% vs 1.7% male, AOR=0.16, 95% CI: 0.04–0.58). Among URB participants, condom use was associated with sexual activity within the previous month (21.0% vs 4.4% non-recent activity, AOR=2.26, 95%CI:1.37–3.74). In univariable analysis, participants who reported sexual debut at ≥ 15 y (17.9%) were more likely to report condom use than < 15 y (17.9%, OR=1.24, 95%CI: 0.95–1.62, $p=0.08$).

Conclusions Reported condom use at last sexual encounter was low among adolescents in URB and CNB schools, particularly among adolescents of both sexes in CNB. Younger adolescents, those with a lower age of sexual debut, and especially females in URB and males in CNB, require targeted interventions to increase condom use at all encounters.

P229 PREVALENCE OF MACROLIDE AND TETRACYCLINE RESISTANT *TREPONEMA PALLIDUM* STRAINS IN SYPHILIS CASES, LIMA AND PUCALLPA, PERU

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Background Genetic resistance to macrolides has become widespread in *Treponema pallidum* subspecies *pallidum* (TP), while tetracyclines continue to be useful. Alternatives to injectable penicillin are needed globally, given outages and possible allergies. Monitoring of the frequency of resistance in TP isolates remains important for both classes of antibiotics, as unregulated antibiotic use could limit the utility of tetracyclines and macrolide antibiotics like azithromycin in Peru and many countries. Our objective was to determine the frequency of macrolide and tetracycline resistance in TP-positive lesion samples from syphilis cases at Peruvian sexual health clinics.

Methods We analyzed 58 lesion swab samples from patients diagnosed with active syphilis from five STI clinics in Lima and Pucallpa, Peru, from 2019–2020. We extracted DNA from clinical specimens and amplified *tp0548* and *tp0574* genes to detect the presence of TP. For macrolide resistance, we performed restriction fragment length polymorphism of the 23S rRNA gene to detect the A2058G and A2059G mutations. For tetracycline resistance, we analyzed the G1058C point mutation in the 16S rRNA sequences assembled from whole-genome sequencing and compared them with the standard TP Nichols strain sequence using snippy v.2 software.

Results Among the 58 lesion samples analyzed, 25 (44%) were positive for TP DNA. Among those, we found the A2058G macrolide resistance mutation in 22 samples (88%); none (0%) had the A2059G mutation. None (0%) of six 16S rRNA sequences analyzed contained the G1058C point mutation for tetracycline resistance.

Conclusions The frequency of macrolide-resistance mutations in these TP isolates remains elevated, confirming that

macrolides should not be used to treat syphilis. Conversely, as resistance to tetracyclines was absent, corroborating that tetracyclines continue to be useful as a safe and effective alternative for syphilis treatment in this context.

P232 ANTIMICROBIAL RESISTANCE OF NEISSERIA GONORRHOEA IN GERMANY 2016–2020, RESULTS FROM THE GONOCOCCAL RESISTANCE NETWORK (GORENET)

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Background In Germany, *Neisseria gonorrhoeae* (NG) infections are not reportable and limited data on epidemiology and antimicrobial resistance (AMR) are available. Within the Gonococcal Resistance Network (GORENET) we monitor the NG-AMR in Germany to inform treatment guidelines.

Methods Between 2016–2020, 75 laboratories sent NG-isolates to the German reference laboratory which were tested for ceftriaxone, cefixime, azithromycin, ciprofloxacin, and penicillin susceptibility using MIC-strip test. AMR-results were interpreted according to the EUCAST breakpoints version 11.0. The proportion of resistant isolates was calculated.

Results As of December 2020, 2437 isolates were tested, 89.2% were from men. Median age was 33 (men) and 29 years (women). Most isolates were urethral (77.7%), followed by cervical (4.6%) and rectal samples (4.5%).

One sample in 2018 was resistant to ceftriaxone (2018: 0.2%). Resistance to azithromycin was increasing from 2016–2020 (2016: 0.8%, 2017: 1.0%, 2018: 3.7%, 2019: 6.6%, 2020: 12.8%). Cefixime resistance was stable (2016: 0.6%; 2017: 0.6%, 2018: 0.9%; 2019: 1.9%, 2020: 0.8%).

On average, 60.4% of samples were ciprofloxacin- (2016: 54.3%; 2017: 63.8%, 2018: 58.5%; 2019: 66.2%, 2020: 59.5%) and 17.4% penicillin-resistant (2016: 16.1%; 2017: 15.1%, 2018: 17.0%; 2019: 21.2%, 2020: 17.9%).

Conclusion Comparable to other Western countries, the majority of isolates originated from men. The first-line substance ceftriaxone remains effective in Germany, whereas resistance to the important second first-line therapy component azithromycin reached high levels, nearly doubling from 2019 to 2020. Thus, ceftriaxone monotherapy is also recommended in Germany since 2019 if patient adherence is warranted.

Cefixime-resistance remained low considering that the substance is currently not available in Germany. Penicillin and ciprofloxacin resistance was stably high. NG susceptibility testing is crucial to monitor the AMR-situation in Germany and to inform treatment guidelines.

P234 'THERE IS NO MAGIC BULLET.' CONSIDERATIONS FOR ADOPTION OF MOLECULAR CHLAMYDIA AND GONORRHOEA POINT OF CARE TESTS INTO ROUTINE CARE

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