420. Prevalence of Oropharyngeal Meningococcal Carriage in an Urban STD Clinic Abigail N. Turner, PhD1; Alexandria Carter, BS2; Yih-Ling Tseng, PhD3; Morgan Brown, MPH1; David Stephens, MD3; Brandon Snyder, BS3; Devlin Prince, MA1 and Jose A. Baran, DO2; 1Ohio State University, Columbus, Ohio; 2The Ohio State University, Columbus, Ohio; 3Emory University, Atlanta, Georgia; 4Ohio University Heritage College of Osteopathic Medicine, Athens, Ohio; 5Columbus Public Health, Columbus, Ohio; 6The Ohio State University Wexner Medical Center, Columbus, Ohio.

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Background. Neisseria meningitidis (Nm) can cause invasive disease, but it also asymptptomatically colonizes the pharynx in approximately 10% of the general population. Older studies have reported higher carriage rates (>30%) among individuals attending sexually transmitted disease (STD) clinics. This study examined the prevalence of oropharyngeal Nm carriage in STD clinic attendees in Columbus, Ohio.

Methods. Per normal procedures, all patients presenting for care in the STD clinic who report oral sex in the last year are screened for oropharyngeal Neisseria gonorrhoeae (Ng) using nucleic acid amplification testing (NAAT). For the same patients, we also initiate cultures using media selective for Neisseria spp. Analytical Profile Index Neisseria Haemophilus (API NH) and Nm-specific PCR screening is performed on colonies with oxidase-positive Gram-negative diplococci to distinguish between Ng and Nm. For this study, we then performed PCR-based genogrouping on confirmed Nm isolates.

Results. Between July 2017 and March 2019, oropharyngeal screening occurred at 5,015 patient visits and oropharyngeal Nm was detected at 163 visits (3.3%). Nm-positive individuals were primarily male (69.9%), Caucasian (62.6%), with non-Hispanic ethnicity (98.8%). The median age was 27 years and 5.5% were HIV-positive. Among male cases, 49.1% reported sex with men; among women, 98.0% reported sex with men. Meningococcal vaccination status was unknown for 71.2%, but 26.4% had documentation of prior MenACWY vaccination and 2.3% had prior MenB vaccination. Among the 163 cases, genogroup distribution was 23.9% B, 10.4% E, 9.8% Z, 3.1% C, 0.6% W, 0.6% V, and 39.3% capsule null locus. For 13.5%, the selected screening approach could not determine genogroup.

Conclusion. In STD clinic patients reporting recent oral sex, we found a much lower prevalence of oropharyngeal Nm carriage compared with what has been reported historically for similar populations. While Nm was the most common capsular type identified by genogrouping, almost 40% of Nm isolates contained the capsule null locus, making them unable to express capsule. Additional studies should evaluate the effect of Nm vaccination programs on carriage among STD clinic attendees.

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Results. Of 448 participants, 168 (37.5%) reported rectal STI screening. One hundred twenty-seven (35.8%) of 355 HIV-negative men, 41 (58.6%) of 70 HIV-positive men, and none of 23 men who did not know their HIV status reported screening. Among HIV-negative men, having a healthcare provider who offered HIV testing (adjusted prevalence ratio [aPR]=2.09, 95% confidence interval [CI]: 1.43, 3.04), a syphilis diagnosis (aPR=1.32, 95% CI: 1.13, 1.58), use of pre-exposure prophylaxis (aPR=1.57, 95% CI 1.21, 2.04), and condomless anal sex with casual partners in the prior 12 months (aPR=1.74; 95% CI: 1.36, 2.22) independently predicted screening for rectal STI in multivariable analysis. HIV-positive men who reported having a provider who always or often discussed conversations about sex were significantly more likely to report screening compared with men who did not have such a provider (aPR=1.48; 95% CI: 1.06, 2.06).

Conclusion. Rectal STI screening is not universal in a venue-based sample of sexually-active MSM. Implementing innovative, acceptable, and accessible screening practices and improving provider comfort with talking about sex are paramount to increasing rectal STI screening.

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424. Use of the ResistancePlus MG Multiplex PCR Assay to Determine the Prevalence of Mycoplasma genitalium and Macrolide Resistance in a High-Risk US Population

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Background. Mycoplasma genitalium is a significant agent of sexually transmitted infections (STI). Case rates have declined as rates of macrolide resistance has become increasingly prevalent. Diagnosis of M. genitalium infection and macrolide resistance detection is possible using nucleic-acid amplification tests (NAAT); use of such assays could improve patient management and antimicrobial stewardship. In this study we used one such assay, ResistancePlus MG (RPMG) to determine the prevalence of M. genitalium infection and macrolide resistance in a cohort of patients attending 3 public health and diagnostic practices.

Methods. De-identified urogenital samples submitted to the LabCorp facility in Burlington, NC for routine Chlamydia trachomatis (CT) and Neisseria gonorrhoeae (NG) NAAT testing from 3 public health clinics were analyzed in the study. All samples had been collected in the Aptima Specimen Collection system and tested with the Aptima Combo 2 CT/NG NAAT. A total of 1,261 samples (770 male, 491 female) from this cohort were successfully tested for M. genitalium and macrolide-resistance mediating mutations (MRM) using the RPMG multiplex PCR assay.

Results. The prevalence of M. genitalium in this patient cohort was 10.4% (131/1,261), not significantly different to the prevalence of C. trachomatis (12.0%; P = 0.202) but significantly higher than the prevalence of N. gonorrhoeae (6.7%; P = 0.002). Sixty-five (5%) of the 131 M. genitalium positives were also positive for MRM and thus azithromycin resistant.

Conclusion. M. genitalium infections were common amongst unselected individuals evaluated for treatable STI in the eastern United States and the rate of macrolide resistance in this population was significant. In addition, the RPMG assay was shown to be a simple and accurate method for simultaneously diagnosing M. genitalium infections and detecting MRM and could be used to inform therapeutic decision.

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425. Longitudinal Trends in Risk Behaviors and Sexually Transmitted Diseases among Adolescents and Young Adults at a Sexually Transmitted Diseases Clinic, 2013–2017

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Background. Sexually transmitted disease (STD) rates continue to rise in the United States (US). Over half of all new STDs occur in adolescents and young adults (AYA). Few studies have evaluated how sexual behaviors such as number of partners or condom use may contribute to this increase. We aimed to determine the association of sexual behaviors and condom use with STD incidence over time among AYA.

Methods. We reviewed all AYA ages 13–26 years attending a public STD clinic in Rhode Island from 2013–2017. We reviewed demographic and behavioral data including age, gender identity, risk group, race, ethnicity, insurance status, sexual behaviors, substance use, self-reported STD/HIV diagnosis (lifetime, past year), condom use, and HIV/STD testing results. We report proportions in 2013 and 2017, and performed trend analyses (Cochran-Armitage test for categorical variables and Kruskal-Wallis trend test for continuous variables) to determine trends over time.

Results. A total of 3,822 AYA visited the clinic during the study time period. An increase in multiple (≥25) partners (from 29% of AYA in 2013 vs. 38% in 2017, P < 0.001), self-reported past year and lifetime STD diagnosis (12 vs. 21%, P < 0.001 and 19 vs. 33%, P < 0.001, respectively), and lab-documented diagnosis of any STD (15 vs. 25%, P < 0.001, syphilis (2 vs. 5%, P < 0.006), any chlamydia (11 vs. 20%, P < 0.001), and any gonorrhea (13 vs. 8%, P = 0.008). A decrease was observed for: white race (66% in 2013 vs. 43% in 2017, P < 0.001), uninsured (73 vs. 53%, P < 0.001), condomless sex during oral as well as vaginal/anal sex (22 vs. 10%, P = 0.001 and 16 vs. 8%, P = 0.001, respectively), and self-reported HIV diagnosis (2.5% to 9%, P = 0.06).

Conclusion. Among AYA, risk behaviors such as condomless sex and multiple partners increased significantly from 2013–2017, which may be contributing to an increase in STDs. Increased public health efforts are needed to promote education and other interventions to address behaviors associated with STD transmission.

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426. Prevalence of Human Papilloma Virus, Anal, and Cervical Dysplasia in Transgender Persons: A Systematic Review of the Literature

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Background. Human papilloma virus (HPV) is the most common sexually transmitted infection (STI) in the United States (US) and is associated with the development of cervical and anal dysplasia; however, little is known about the epidemiology of HPV in transgender persons. In light of this information, the objective of this study was to conduct a systematic review of the literature to evaluate the existing epidemiologic data on HPV infection prevalence as well as anal and cervical dysplasia in transgender persons.

Methods. The PubMed and Scopus databases were queried using the keyword “transgender” in combination with one of the following: PAP, cervical cancer, and genital warts. The search generated 86 articles, when accounting for duplicates across searches. We included original research articles published from January 1969 to March 2019. Excluded were non-English articles, studies that did not have HPV or cytology testing data, and studies that did not have aggregated transgender data.

Results. In total, 13 articles were included in the review, of which 9 focused on transgender women (TW), 3 on transgender men (TM), and 1 on both TW and TM. HPV DNA testing was performed in 10 studies, with 7 of those offering prevalence data for specific HPV genotypes. Overall, HPV prevalence in TW ranged from 13%-97.4%, with High Risk HPV (HR-HPV) prevalence ranging from 13%-82.5%. Anal cytology data for TW was presented in 2 studies, both of which cited a 42% prevalence of abnormal cytology. Cervical or vaginal cytology was evaluated in 4 articles, 3 of which involved TW and 1 of which involved TW and non-TW patients. Among TM, the prevalence of abnormal cervical cytology ranged from 6%-42%.

Conclusion. Our review highlights the lack of HPV research and the high variability of the existing data about the transgender population. Further study is needed to better understand not only the epidemiology of HPV and resultant dysplastic sequelae, but also to inform the development of transgender sensitive diagnostic methods for this infection. The diverse genital anatomy represented in the transgender community as well as the gender dysphoria these patient's experience during testing pose myriad diagnostic challenges that will need to be considered in the development of screening and diagnostic practices.

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