961. Prevalence and Macrolide Resistance of Mycoplasma genitalium After Initiation of HIV Preexposure Prophylaxis

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Background. Recent evidence shows that patients using HIV preexposure prophylaxis (PrEP) have an increased rate of bacterial sexually transmitted infections (STIs), including syphilis, chlamydia, and gonorrhea. The rate of *Mycoplasma genitalium* infections and the susceptibility of *M. genitalium* in patients on PrEP have been less well described.

Methods. We studied all patients who started on PrEP in the AZ Sint-Jan Hospital Bruges from January 6, 2017 to January 4, 2019. Patients were screened for *M. genitalium* and other bacterial STIs with rectal swabs, pharyngeal swabs, first-voided urine and blood collections at baseline and quarterly intervals after initiating PrEP. TaqMan array card technology was used to detect *M. genitalium* and determine macrolide-resistance mediating mutations in the region V of the 23S rRNA gene (A2058G, A2059G, A2058C, and others). Patients with an STI were treated based on a national guideline. Proportions were estimated using a Generalized Estimating Equations model with independent correlation structure.

Results. A total of 136 males and 1 female (median age, 40 years (interquartile range (IQR), 20–79)) were included in the study. All men were gay or bisexual. The median follow-up time was 11.3 months (IQR, 4.7–15.3). In total, 117 patients (85%) used PrEP daily at their last visit. The estimated proportion of patients with *M. genitalium* at baseline, 3 months, 6 months, 9 months, and 12 months was 7% (95% CI 4–13), 12% (95% CI 7–20), 7% (95% CI 4–15), 6% (3–15), and 6% (2–15). Thirty-two patients (23%) tested at least once positive for *M. genitalium* during the study period. The estimated percentage of macrolide resistance increased from 40% (95% CI 16–70) at baseline to 71% (95% CI 44–89), 67% (95% CI 27–92), 80% (95% CI 31–97), and 75% (95% CI 24–97) at 3 months, 6 months, 9 months, and 12 months, respectively.

Conclusion. After initiation of PrEP, the prevalence of *M. genitalium* in our cohort at quarterly screening was not increased compared with baseline. However, a nonsignificant trend of an increased percentage of macrolide-resistant strains was observed.

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962. Trends in Cervical Pre-cancers by Race and Ethnicity During the Human Papillomavirus Vaccine Era, HPV Vaccine Impact Monitoring Project (HPV-IMPACT), United States, 2008–2016

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Background. Since human papillomavirus (HPV) vaccine introduction in the United States in 2006, cervical pre-cancer incidence has declined in young women, but pre-cancer trends have not been reported by race/ethnicity. We evaluated trends in cervical pre-cancers from 2008 to 2016 in non-Hispanic (NH) white, NH black, NH Asian, and Hispanic women identified through active population-based surveillance in the 5-site Human Papillomavirus Vaccine Impact Monitoring Project (HPV-IMPACT).

Methods. We analyzed data on cervical intraepithelial neoplasia (CIN) grades 2–3 and adenocarcinoma *in situ* (CIN2+) cases aged 20–39 years. Annual CIN2+ rates per 100,000 women were calculated stratified by race/ethnicity in 5-year age groups, using multiple imputation to account for 10% missing race/ethnicity data. Rates were also calculated using estimated numbers screened for cervical cancer to control for known declines in screening. Trends, evaluated using JoinPoint software, are presented as average annual percentage changes (AAPC) with 95% confidence intervals (CI).

Results. A total of 18,222 CIN2+ cases (62% NH white, 16% NH black, 16% Hispanic, 6% Asian) were reported from 2008 to 2016. CIN2+ rates among 20–24 year-olds declined significantly in all groups: NH white, AAPC: −14.2 (95% CI: −16.3, −12.1); NH black, AAPC: −15.5 (−19.5, −11.4); Asian, AAPC: −14.8 (−20.5, −8.8); Hispanic, AAPC: −14.3 (−17.9, −10.5). In 25–29 year olds, a significant decline was observed for NH whites only (AAPC: −2.4, [−4.0, −0.8]). No declines were seen in 30–34 or 35–39 year olds. Among screened 20–24 year-olds, significant but smaller declines were observed (AAPC: −9.8 to −8.4); no declines were observed in screened 25–29 year olds or older groups.

Conclusion. In this evaluation of CIN2+ trends by race/ethnicity during the HPV vaccine era, the significant declines in 20–24 year olds across all groups, including among screened women, is consistent with equitable vaccine impact on CIN2+.

Disclosures. **All Authors:** No reported Disclosures.

963. Extragenital Chlamydia and Gonorrhea Among Females Visiting an STD Clinic

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Background. Rates of chlamydia (CT) and gonorrhea (GC) are increasing in the United States. Annual screening for urogenital infection is recommended for sexually active females less than 25 years and older females at risk. CT and GC can be detected at pharyngeal and rectal sites and are commonly asymptomatic. Currently, extragenital screening is only recommended in men who have sex with men (MSM). Data among females on extragenital CT and GC are limited.

Methods. We reviewed all females presenting to a sexually transmitted diseases (STD) clinic in Providence, Rhode Island from May 2014 to December 2018. During this time, urogenital, pharyngeal, and rectal screenings were offered to all females presenting for care. We evaluated demographics, behaviors, and laboratory data on urogenital, pharyngeal and rectal CT/GC. Univariate and bivariate analyses were performed to determine the characteristics of demographic and behavioral variables associated with extragenital infection.

Results. During the study period, 2,672 females presented for STD screening. Median age was 26 years (interquartile range [IQR]: 33–22). Most patients (95%) reported engaging in sex with male partners. More than half (59%) had at least one extragenital (pharyngeal or rectal) test performed (77% pharyngeal only, 0.4% rectal only, 23% both). During the study period, there were 334 CT and 66 GC infections identified across all three anatomical sites. Of individuals with a positive CT result (N = 273), 85% (N = 233) had a positive urogenital, 19% (N = 53) a positive pharyngeal, and 18% (N = 48) a positive rectal specimen. Of individuals with a positive GC result (N = 50), 62% (N = 31) had a positive urogenital, 54% (N = 27) a positive pharyngeal, and 16% (N = 8) a positive rectal specimen. Among individuals with a positive CT or GC result, (N = 315), 17% (N = 55) had an extragenital infection in the absence of a positive urogenital result. No single risk factor was statistically associated with an extragenital CT or GC infection. Most individuals (82%) were asymptomatic at presentation.

Conclusion. In an STD clinic setting, a significant number of pharyngeal and rectal CT/GC infections may be missed in the absence of extragenital screening. Settings which engage at-risk females should consider implementation of routine CT/GC extragenital screening.

Figure 1: Chlamydia (CT) Infections by Site

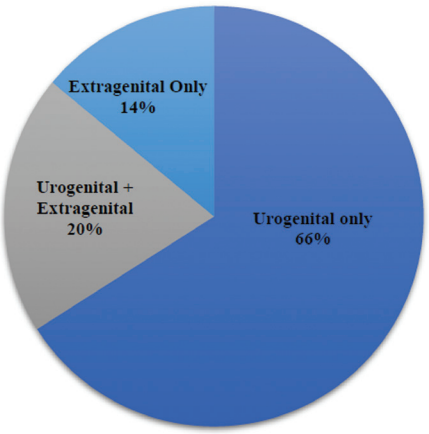

Figure 2: Gonorrhea (GC) Infections by Site

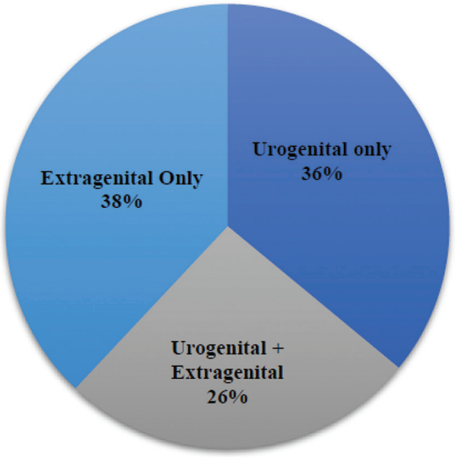

Table 1. Demographic, behavioral, and clinical attributes of female patients presenting to an STD clinic, 2014-2018

	Total N (%)	2014 N (%)	2015 N (%)	2016 N (%)	2017 N (%)	2018 N (%)
N	2672 (100)	266 (10)	476 (18)	548 (20)	700 (26)	682 (25)
Female Sex	2672 (100)	266 (10)	476 (18)	548 (20)	700 (26)	682 (25)
Gender of Sex Partners						
Men only	2332 (87)	230 (86)	429 (90)	498 (91)	593 (85)	582 (85)
Women and men	212 (8)	25 (9)	40 (8)	40 (7)	49 (7)	58 (9)
Women only	40 (1)	6 (2)	7 (1)	10 (2)	7 (1)	10 (1)
Race						
Non-Hispanic White/ Caucasian	1007 (38)	123 (46)	209 (44)	228 (42)	228 (33)	219 (32)
Non-Hispanic Black/African-American	529 (20)	48 (18)	89 (19)	84 (15)	146 (21)	162 (24)
Hispanic	753 (28)	66 (25)	108 (23)	159 (29)	223 (32)	197 (29)
Other	338 (13)	24 (9)	63 (13)	73 (13)	90 (13)	88 (13)
Age* (years)	26 (33-22)	25 (31-22)	25 (33-21)	25 (31-21)	26 (35-22)	27 (36-22)
Presented with Symptoms						
Yes	457 (17)	37 (14)	46 (10)	91 (17)	129 (18)	154 (23)
No	2187 (82)	205 (77)	429 (90)	457 (83)	569 (81)	527 (77)
Total Number of Partners, past 12 months*	2 (3-1)	2 (4-1)	2 (4-1)	2 (4-1)	2 (3-1)	2 (3-1)
Vaginal/Anal Sex Partners*	2 (3-1)	2 (4-1)	2 (3-1)	2 (3-1)	2 (3-1)	2 (3-1)
Oral Sex Partners*	1 (3-1)	1 (3-1)	2 (3-1)	2 (3-1)	1 (2-1)	1 (3-1)
STD diagnosis, past 12 months						
Yes	374 (14)	32 (12)	60 (13)	78 (14)	89 (13)	115 (17)
No	2289 (86)	234 (88)	416 (87)	470 (86)	608 (87)	561 (82)
STD diagnosis, lifetime						
Yes	759 (28)	86 (32)	136 (29)	161 (29)	182 (26)	194 (28)
No	1899 (71)	180 (68)	340 (71)	386 (70)	513 (73)	480 (70)
GC/CT Tests Performed						
Urogenital						
Yes	2515 (94)	251 (94)	446 (94)	519 (95)	658 (94)	641 (94)
No	157 (6)	15 (6)	30 (6)	29 (5)	42 (6)	41 (6)
Extragenital						
Yes	1582 (59)	12 (5)	344 (72)	343 (63)	419 (60)	464 (68)
No	1090 (41)	254 (95)	132 (28)	205 (37)	281 (40)	218 (32)

* Median (IQR)

Disclosures. **All Authors:** No reported Disclosures.

964. Journey to Zero Harm: Eliminating Catheter-Associated Urinary Tract Infections (CAUTIs) for 12 Consecutive Months at Two Community Hospitals

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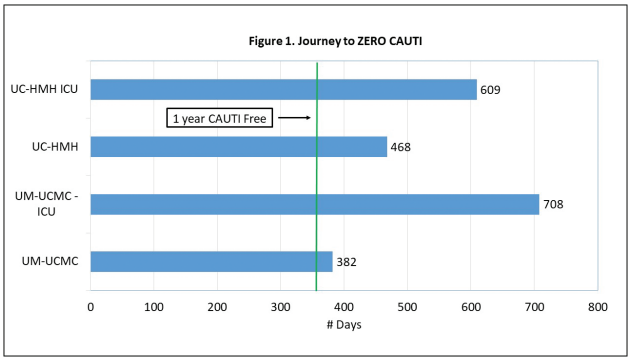
Background. Many US hospitals have implemented CAUTI prevention bundles (CPB) but few have achieved the goal of zero CAUTIs for 12 consecutive months. We report our journey to zero harm at two community hospitals that have each successfully eliminated CAUTIs from all their units, including the intensive care unit (ICU), for over 12 consecutive months.

Methods. From April 2015 to March 17 (Period A), CPB was implemented at University of Maryland-Upper Chesapeake Medical Center (UM-UCMC) and University of Maryland-Harford Memorial Hospital (UM-HMH), each with 195 and 128 beds, respectively. UM-UCMC has a 15-bed ICU while UM-HMH has a 5-bed ICU. The CPB included placement of urinary catheters only for approved indications, use of two persons (buddy system) for catheter insertion, Nurse Driven Protocol for catheter removal, and silver-impregnated cloths for perineal care. A massive frontline engagement campaign "You can't have a CAUTI if you don't have a foley" was launched from April 2017 to March 2019 (Period B). The focus was intensified on reducing catheter utilization rates. Real-time feedback on new CAUTIs cases was provided to leadership at the daily safety briefs and to nurses and physicians at the unit-based huddles. The number of CAUTIs and "days without a CAUTI" was shared with team members via small posters and whiteboards.

Results. A statistically significant decrease in utilization of urinary catheters was observed (Table 1). Both hospitals and their respective ICUs remained CAUTI free for >12-consecutive months (Figure 1).

Conclusion. Eliminating CAUTIs for 12 consecutive months in acute care community hospitals is possible and serves as a step toward the journey to zero harm. Reducing catheter utilization is a key strategy. Humanizing each infection and providing real-time feedback to the frontline staff and leadership in whole numbers (instead of the old paradigm of reporting CAUTI rates) may have resulted in greater engagement.

	UM - UCMC				UM - HMH			
	ICU		Non-ICU		ICU		Non-ICU	
Period	A	B	A	B	A	B	A	B
No. of inpatient-days	8164	8237	118320	112858	3411	3309	53533	52597
No. of catheter days	4371	2588	9330	5323	1921	1280	4248	1865
No. of CAUTIs	6	1	17	4	2	3	5	2
Utilization rate	0.535	0.314	0.079	0.047	0.563	0.387	0.079	0.035
Confidence interval	0.55 - 0.61		0.57 - 0.61		0.63 - 0.73		0.42 - 0.47	
p - value	<0.001		<0.001		<0.001		<0.001	



Disclosures. **All Authors:** No reported Disclosures.

965. The Efficacy of Oral B-lactam Antibiotics as Step-down Therapy for Acute Pyelonephritis

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Background. Often, oral β-lactams have been avoided for the treatment of pyelonephritis due to data suggesting lower efficacy vs. currently recommended therapy. However, increasing resistance and concerns for collateral damage of primarily recommended oral agents have increased interest in the use of oral β-lactams for the treatment of pyelonephritis. Authors sought to assess the impact of oral step-down β-lactam therapy compared with an alternative oral agent (fluoroquinolone or trimethoprim-sulfamethoxazole) in patients with acute pyelonephritis requiring hospitalization.

Methods. This is an IRB-approved, multicenter, retrospective study of hospitalized patients with acute pyelonephritis in six hospitals within two healthcare systems who received an IV cephalosporin followed by step-down therapy with either a β-lactam or an alternative agent (i.e., fluoroquinolone or trimethoprim-sulfamethoxazole). We theorize that oral β-lactams are noninferior to alternative oral agents for step-down therapy for pyelonephritis requiring hospitalization. Treatment success was defined as lack of 30-day urinary system-related re-admission. We calculated that 89 patients were required in each group to achieve 80% power with a noninferiority margin of 15% and assuming a cure rate of 85% as reported in previous literature.

Results. A total of 188 patients were included in the study; 115 and 73 who received an oral β-lactam and an alternative oral agent, respectively. There was no difference in treatment success when comparing the two groups (113 [98%] vs. 70 [96%]; $P = 0.38$). The mean length of hospital stay, number of patients treated with ceftriaxone inpatient, and the duration of IV therapy was the same in both groups, though mean duration of oral therapy was longer in the oral alternative group compared with the oral β-lactam group (9.5 [+ 3.7] vs. 8.2 [+ 2.7] days, respectively; $P = 0.02$). Baseline characteristics other than mean age were the same, as reported in Table 1.

Conclusion. When using 30-day urinary system-related readmission as a surrogate for treatment success, we found no difference between β-lactams vs. alternative agents for oral step down therapy for pyelonephritis requiring hospitalization.