Conclusion. An ID specialist-led *C. difficile* testing approval process was feasible and associated with a significant decrease in HO-CDI testing and infection rates, due to enforcement of appropriate testing. ID specialists can provide a key role in enforcing appropriate *C. difficile* testing, but more experience is needed with respect to sustainability.

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975. *Clostridium difficile* Infection and Antibiotic Prescription Rates in the Community: Explaining the Gender Gap

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Session: 126. Healthcare Epidemiology: The Poop Pager and Other Novel Perspectives on C. difficile in the Healthcare Setting

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Background. Previous studies have reported higher incidence rates of community-associated *Clostridium difficile* infection (CA-CDI) in women than in men. This cross-sectional population-based study examines whether this difference in CA-CDI rates across genders is driven by or independent of antibiotic use.

Methods. Medicaid and State Employee Health Plan pharmacy claims for outpatient oral antibiotics and associated medical claims were utilized for estimation of community antibiotic prescription rates in South Carolina population 18 to 64 years of age from January 1, 2015 to December 31, 2015. CA-CDI cases were identified from National Healthcare Safety Network (NHSN) and South Carolina Infectious Disease and Outbreak Network (SCION) through complete enumeration of South Carolina population of the same age and study period as above. Incidence rates of CA-CDI were reported in both men and women 18–39 and 40–64 years of age before and after adjustments for antibiotic prescription rates in the same gender and age group. The 95% confidence intervals (CI) were calculated to examine statistical difference in incidence rates across genders within the same age group.

Results. During the calendar year 2015, a total of 1,564 CA-CDI cases were identified in South Carolina residents 18–64 years of age. The incidence rate of CA-CDI per 100,000 person-years was higher in women than in men in age groups 18–39 years (37.3 [95% CI: 32.8–41.8] vs. 21.0 [95% CI: 17.6–24.4]) and 40–64 years (86.4 [95% CI: 80.1–92.8] vs. 56.6 [95% CI: 51.2–61.9]. Similarly, antibiotic prescription rates per 100 person-years were higher in women than men in the 2 respective age groups (118.8 [95% CI: 118.3–119.3] vs. 54.3 [95% CI: 53.9–54.8] and 130.4 [95% CI: 129.8–130.9] vs. 83.8 [95% CI: 83.3–84.4]. After adjustments for antibiotic prescriptions, there was no significant difference in the incidence rates of CA-CDI per 100,000 prescriptions between women and men 18–39 years of age (31.4 [95% CI: 27.6–35.2] vs. 38.6 [95% CI: 32.4–44.8] and 40–64 years old (66.3 [95% CI 61.5–71.2] vs. 67.5 [95% CI: 61.1–73.8]).

Conclusion. Higher crude incidence rates of CA-CDI in women are likely due to higher outpatient antibiotic prescription rates in women when compared with men.

Disclosures. **P. B. Bookstaver**, CutisPharma: Scientific Advisor, <$1,000. Melinta Therapeutics: Speaker's Bureau, <$1,000.

976. *Clostridium difficile* Colonization Molecular Epidemiology and Anti-toxin Serological Responses in Healthy Infants: A Prospective Cohort Study

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Background. Infant *C. difficile* colonization is common, but the molecular epidemiology and immunologic consequences of colonization are poorly understood.

Methods. In this prospective cohort study of healthy infants, serial stools collected between 1–2 and 9–12 month olds were tested for glutamate dehydrogenase (detects nontoxigenic or toxigenic *C. difficile* [TCD]), *tcdB* PCR (detects TCD), and cultured for *C. difficile*. Isolates underwent whole genome sequencing and multilocus sequence typing (MLST). Clonal strains were identified by single nucleotide variant (SNV) analysis. TCD was confirmed by BLAST identification of *tcdA*/*tcdB*. Serum collected at 9–12 month olds underwent ELISA for measurement of IgA, IgG, and IgM against TCD toxins A and B. For comparison, anti-toxin IgG was measured in cord blood of 50 consecutive full-term deliveries (unrelated to study infants). Arbitrary ELISA units were compared by Wilcoxon rank-sum test.

Results. Among 32 infants, 16 (50%) had at least one TCD+ stool, 12 of whom were colonized at least 1 m prior to serology measurements (Figures 1 and 2). A variety of STs were identified, and evidence of putative in-home (enrolled siblings) and outpatient clinic transmission was identified (Figure 3). Infants with TCD colonization had significantly greater levels of anti-toxin IgA and IgG compared with non-colonized infants and IgG compared with unrelated cord blood (Table 1).

Conclusion. Infant *C. difficile* colonization is a dynamic process with variable strain types and duration. Outpatient clinics may be a *C. difficile* reservoir for some patients. TCD colonization is associated with a humoral immune response against toxins A and B, but whether natural TCD immunization protects against CDI later in life requires further investigation.

Table 1: Anti-toxin Serology (Arbitrary ELISA Units)

Group	Tox A IgA	Tox A IgG	Tox A IgM	Tox B IgA	Tox B IgG	Tox B IgM
Not colonized with TCD ($n = 16$)	1.37	10.14	2.74	0.8	6.50	6.14
Colonized with TCD for at least 1 month ($n = 12$)	4.23*	37.87*	2.54	1.73*	20.76*	5.96
Cord Blood ($n = 50$)		10.81^			8.34^	

*$P < 0.05$ (colonized vs. non-colonized); ^$P < 0.05$ (colonized vs. cord blood)

Figure 1: Infant Classification

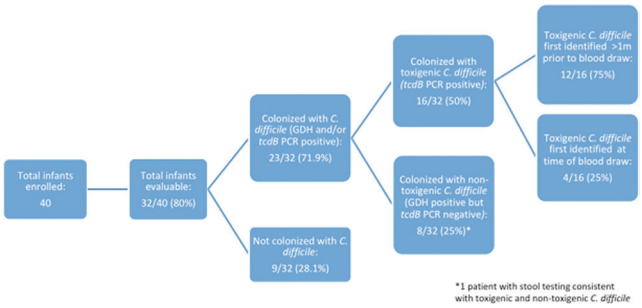

Figure 2:Chronology and Results of Infant Stool *C. difficile* Testing

Figure 3: Molecular Epidemiology of Infant *C. difficile* Isolates