reflex if specific criteria are identified in the electronic medical record in the prior 24 hours: less than 3 loose stools documented, receipt of laxative, opioid antagonist, oral contrast, or tube feed initiation. If any criteria are identified, an embedded alert triggers and the provider must choose "yes, high clinical suspicion" or "no (exit and cancel order)" in addition to providing an order indication. All inpatient C. difficile tests were reviewed from July 1 to Sept 30, 2022 (pre-update) and July 1 to Sept 30, 2023 (post-update). An order rate was calculated per 10,000 patient days as well as HA-CDI rate. Cost analysis was completed using direct lab costs and published costs of $35,000 per HA-CDI. Results of the order questions were reviewed post-update. Incident rate comparison was completed using medcalc. **Results:** Pre-update, 1147 tests were conducted, with an order rate of 104.3. Post-update, 919 tests were performed, with an order rate of 86.6. The positivity rate was 16.1% pre-update and 14.7% post-update. The incidence rate difference was 0.00177 (P 15 (145, 16%). 166 (18%) patients who received laxatives (18 positive, positivity rate 11%) were still tested. **Conclusion:** Implementation of a dynamic order led to a significant reduction in the total number of C. difficile PCR tests performed with associated reduction in HA-CDI and cost savings. Despite this, patients receiving laxatives were still being tested for C. difficile, highlighting the need for ongoing education and feedback. These results support the use of dynamic ordering for diagnostic stewardship, which can benefit both patients and hospitals.

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: C. difficile
Underlying Conditions in Community-associated Clostridioides difficile Infections in Davidson County, Tennessee

Marissa Turner, Tennessee Department of Health; Kristina McClanahan, Tennessee Department of Health; Frederick Thompson, TN DEPT OF HEALTH CEDEP/HAI, Tennessee Department of Health; Zelda Foster, state of TN and Raquel Villegas, state of TN

Background: Clostridioides difficile infections (CDI) are a crucial public health threat becoming a worldwide problem. In 2017, there were 223,900 incident cases and 12,800 deaths in the United States. Underlying conditions, such as diabetes mellitus (DM), put individuals at a greater risk for developing an infection. Whereas CDI was once believed to be mostly healthcare-associated, increasing evidence points to transmission in community settings (CA). We investigated characteristics of CA CDI and associations between pre-existing conditions and CA incident CDI cases using data from Tennessee's CDI surveillance program, an active population- and laboratory-based surveillance system conducted through CDC's Emerging Infections Program. CA incident CDI case data were downloaded from the Incident Case Management System from 2017 to 2021. Count and percentages were determined for each underlying condition, number of underlying conditions, and biological sex. Chi-square analyses determined associations between underlying conditions and sex. Statistical analyses were conducted using SAS v9.4. 2,326 CA incident CDI cases were identified from the catchment area. The case rates per 100,000 population between 2017 and 2021 were 79.7, 81.9, 73.7, 50.7, and 49.6. A total of 39% of the cases were 65 years or older. Most cases were women (64.8%). The overall prevalence for any underlying condition among CA CDI cases was 67.4%. A total of 29.4% of incident cases had one condition, 18.5% had two conditions, and 19.4% had three or more conditions. The most frequently reported pre-existing conditions was DM (22.9%) and gastrointestinal disease (21.7%). We looked at the prevalence of underlying conditions separated in men and women. Men with CA CDI were more likely to have chronic kidney disease (CKD) (19.1% vs 12.7%), DM (26.0% vs 21.2%), immunocompromised conditions (6.4% vs 3.6%), liver diseases (6.5% vs 2.8%), and plegias (1.0% vs 0.2%) than women with CA CDI. Women with CA CDI were more likely to have chronic lung diseases (17.4% vs 12.6%) and connective tissue diseases (4.9% vs 2.2%) than men with CA CDI.

Although the incident CA CDI case rate in Davidson County decreased from 2018 to 2021, it remains a significant threat. In this analysis, underlying conditions in persons with CA CDI were highly prevalent. Men were more likely to have underlying conditions in general, and specifically CKD and DM, than women. Improving understanding of the prevalence of these conditions with CA CDI cases, along with their antibiotic use and community exposures, can help drive prevention strategies to mitigate CA CDI transmission.

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: C. difficile
Resetting the environmental reservoir; evaluating the impact of a new hospital building on Clostridioides difficile infection

Liam Giberson, Hospital of the University of Pennsylvania; Brendan Kelly, University of Pennsylvania; Pam Tolomeo, University of Pennsylvania Perelman School of Medicine; Leigh Cressman, University of Pennsylvania/Dept. of Biostatistics, Epidemiology and Informatics; Laura Cowden, University of Pennsylvania; Laurel Glaser, Hospital of the University of Pennsylvania and Matthew Ziegler, University of Pennsylvania

Background: Prior research has implicated contaminated surfaces in the transmission of Clostridioides difficile within the hospital. To reduce the risk of transmission, enhanced environmental hygiene is performed in rooms of patients with known C.difficile infection (CDI). We wished to evaluate the residual impact of environmental surfaces on hospital-onset CDI (HO-CDI) by comparing HO-CDI rates before and after the opening of a new 504-bed hospital building, HUP Pavilion (PAV). We hypothesized that we would observe a reduction in HO-CDI after opening of PAV due to a reduced burden of C.difficile spores in the environment. **Methods:** We included NHSN reported HO-CDI rates for 28 months prior and 24 months after opening of PAV. Upon opening, patients were divided between the old building (HUP) and PAV. We included all patient units before and after opening. We created hierarchical models of HO-CDI rates using Stan Hamiltonian Monte Carlo (HMC) version 2.30.1, via the "cmdstanr" and "brms" packages with a GAM smooth function by month and intervention period with default, weakly-informative priors. **Results:** At baseline, there was an average of approximately 20,100 patient days per month, subsequently divided between HUP and PAV (mean 10,100 and 12,100 patient days per month). After opening of PAV, we observed a reduced HO-CDI rate (mean 0.21 vs 0.31 per 1000 patient days, P=0.01). When comparing the two specific buildings after opening of PAV, there was a greater reduction noticed in the old building (HUP) as compared to the new building (PAV) (0.12 vs 0.29 per 1000 patient days)

Figure 1. Hospital-Onset Clostridioides difficile Infection Rate per 1000 Patient Days Before a