intensive care unit (ICU) admission, and diarrhea resolution on day of discharge. **Results:** Of the 181 patients, 144 received full treatment, 17 had partial, and 20 had no treatment. Baseline characteristics were similar between groups. No significant difference was found for length of stay or any secondary outcomes (Table 1). Table 2 provides a subgroup of patients who received no treatment vs those receiving partial or full treatment. **Conclusion:** In this study, treatment exposure did not affect clinical outcomes for patients with PCR+/EIA- results, though sample sizes may limit generalizability. Further research is warranted regarding the clinical approach to PCR+/EIA-

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Impact of Clostridioides difficile Reporting on Antimicrobial Therapy Days Directed at Treatment of C. difficile Infections

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Background: Previous studies have found that solely relying on molecular testing is likely to result in the overdiagnosis and overtreatment of C. difficile infections (CDI). Comparable outcomes have been demonstrated in patients with a positive molecular test (C. difficile PCR) result and a negative toxin immunoassay (C. difficile toxin) compared to patients without CDI by either testing **Method:** In 2021 Memorial Hermann Healthcare System converted from C. difficile PCR testing only to C. difficile PCR testing with reflex to C. difficile toxin if positive. A previous internal audit revealed that despite this change in testing, patients who were C. difficile PCR positive and C. difficile toxin negative were still receiving treatment. This study aimed to evaluate the impact of C. difficile reporting on the total days of therapy directed at the treatment of CDI of an 11-hospital health care system in patients who testing C. difficile PCR positive/C. difficile toxin negative. **Methods:** Pre-post, multicenter, retrospective, observational study conducted from January 1, 2023 through March 31, 2023 (pre-intervention) and July 1, 2023 through September 31, 2023 (post-intervention) which included hospitalized adult patients with a C. difficile test ordered within the study period. Intervention included a change in reporting of C. difficile PCR positive/C. difficile toxin negative results to display a laboratory comment. The comment notifies providers of the positive C. difficile PCR result while highlighting this probably reflects colonization with C. difficile as the C. difficile toxin is negative and treatment is rarely indicated. **Results:** In total, 989 C. difficile PCR were order in the pre-intervention cohort compared to 1009 in post-intervention. The overall rate of patients that received therapy directed at CDI decreased from 14% to 10% after the implementation of reporting change. Total days of therapy (DOT) also decreased by 29% from 482 to 342. Days of therapy that were administered to patients with C. difficile PCR positive/negative C. difficile toxin test decreased from 183 to 91. **Conclusions:** Adjusting the reporting of C. difficile results led to an overall numerical decrease of antimicrobial DOT directed at CDI treatment. In particular, among patients with a positive C. difficile PCR/C. difficile toxin negative test a 50% reduction in DOT was observed. Further data are required to assess the overall clinical impact of adjusting CDI reporting methods.

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Audit and Feedback to Ordering Providers to Reduce Inappropriate C. difficile Testing and Hospital Onset C. difficile Rate

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Background: Inappropriate Clostridioides difficile (C. difficile) laboratory testing is common in hospitals and leads to over diagnosis, unnecessary treatment, and elevated hospital onset C. difficile infection (HO-CDI) metrics. Diagnostic stewardship is essential to avoid inappropriate testing, but limited data exists on optional interventions. **Methods:** A diagnostic stewardship intervention targeting CDI testing comprised of education and prospective audit with feedback was performed a VA facility (inpatient, outpatient, and long-term care units). Education on appropriate indications for CDI testing was provided in pre-intervention (9/2022 to 5/2023) and intervention periods (6/2023 to 12/2023). During the intervention period, all CDI tests (positive or negative) were audited after completion in real-time by an Infectious Diseases physician and feedback was given to ordering providers and/or their supervising physician (if trainee) for all tests not meeting an appropriate indication. Appropriate indication was defined as ≥3 liquid stools in 24 hours or symptoms of fulminant disease. Testing was considered inappropriate if no clinical symptoms, patient received laxatives within 48 hours, test was performed for test-of-cure or within 7 days of a prior test with no clinical change, or delayed testing in patients with diarrhea on admission. The rate of HO-CDI per 10,000 bed days of care (BDOC) per LabID event was compared during the pre-intervention and intervention periods, and ordering appropriateness was compared for all tests and hospital onset tests before (3/2023-5/2023) and after (6/2023-12/2023) feedback was performed. **Results:** After starting audit and feedback, HO-CDI rate decreased from 3.92 per 10,000 BDOC to 0.99 per 10,000 BDOC (p=0.03). HO-CDI rate among tests that were inappropriate was 2.19 and 0.80 per 10,000 BDOC during the pre-intervention and intervention periods, respectively (p=0.40). Average overall tests per month decreased from 37.8 to 28.1 after the intervention. Rate of all inappropriate tests decreased from 16.25 to 7.96 per 10,000 BDOC (p=0.04) and rate of hospital onset inappropriate tests trended toward decrease from 9.29 to 4.77 tests per 10,000 BDOC (p=0.07). The most common reasons for inappropriate testing were < 3 episodes of diarrhea in 24 hours (54% pre-intervention, 65% intervention) and laxative use (57% pre-intervention, 45% intervention). No cases of delayed testing leading to worsened disease were identified during the intervention. Cost savings for decreased tests were estimated at $150-300 per month. **Conclusion:** An intervention comprised of education and real-time audit and feedback of all CDI tests obtained at a VA facility resulted in decreased inappropriate testing and reduced the rate of HO-CDI.

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Leveraging the Electronic Medical Record in C. difficile Diagnostic Stewardship

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Background: Clostridioides difficile PCR is extremely sensitive but cannot differentiate colonization versus active disease. Over diagnosis of C. difficile infection (CDI) has negative consequences including overuse of antibiotics targeting C. difficile, increased hospital-acquired (HA)-CDI rates, and increased healthcare costs. We describe the implementation of a Clinical Decision Support tool embedded in the C. difficile order and the result on testing, HA-CDI rates and healthcare costs. **Methods:** The C. difficile order was updated in June 2023 with 4 dynamic questions that

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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.

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Underlying Conditions in Community-associated Clostridioides difficile Infections in Davidson County, Tennessee

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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.

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Resetting the environmental reservoir; evaluating the impact of a new hospital building on Clostridioides difficile infection

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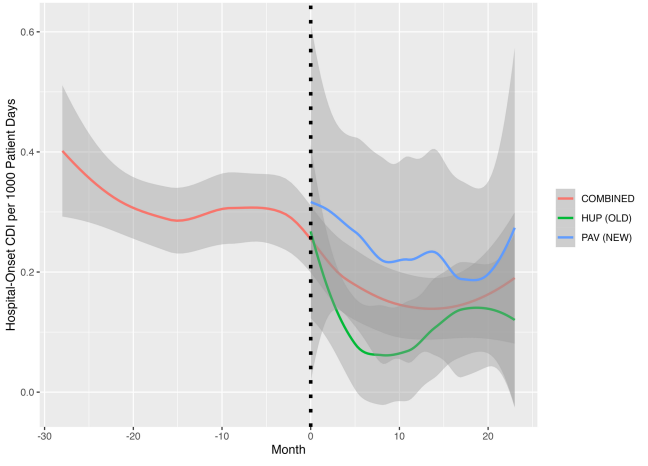
Background: Prior research has implicated contaminated surfaces in the transmission of Clostridioides difficile within the hospital. To reduce the risk of transmission, enhanced environmental hygiene is performed in rooms of patients with known C.difficile infection (CDI). We wished to evaluate the residual 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



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