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799. Mini Root Cause Analysis Reveals Opportunities for Reducing *Clostridioides difficile* Infection Rates

Nicholas A. Turner, MD, MHSc[1]; Jessica L. Seidelman, MD, MPH[1]; Rebekah Wrenn, PharmD, BCPS[1]; Deverick J. Anderson, MD, MPH[2]; Sarah S. Lewis, MD, MPH[1]; Becky A. Smith, MD[1]; [1]Duke University, Durham, NC; [2]Duke Center for Antimicrobial Stewardship and Infection Prevention, Durham, NC

Session: P-32. HAI: C. difficile

Background: *C. difficile* remains the single most common pathogen among healthcare-associated infections. We conducted a multi-center, prospective study using on-site, near real-time root cause analyses to identify opportunities for reducing hospital-onset *C. difficile* infection rates (HO-CID).

Methods: This prospective cohort study enrolled inpatients with HO-CDI admitted to one of 20 participating hospitals in the southeastern United States from July 2019 to June 2020. For each HO-CDI case, mini root cause analyses were conducted by on-site physicians, infection preventionists, or stewardship pharmacists to assess appropriateness of *C. difficile* testing and inpatient antibiotic use from the 30 days preceding HO-CDI diagnosis.

Results: The cohort captured 554 total HO-CDI cases and 956 antibiotic use events. 147 (26.5%) of HO-CDI cases were adjudicated as likely inappropriate and a further 51 (9.2%) as potentially inappropriate. Among inappropriately tested cases, 103 (52.0%) had received either laxatives or tube feeds in the preceding 48 hours. 132 (13.8%) of antibiotic use events were identified as potentially inappropriate. Among potentially inappropriate antibiotic use events, 40 (30.3%) received unnecessarily broad-spectrum antibiotics, 20 (15.2%) lacked a confirmed infectious diagnosis, and 4 (3.0%) received a longer than guideline-recommended duration. Risk of inappropriate antibiotic use varied by infection type, with treatment of urinary tract infection being associated with the highest risk of inappropriate antibiotic use (table 1).

Table 1: Relative Risk of Inappropriate Antibiotic Use by Indication

Infection Type	RR for inappropriate antibiotic use (95% CI)
Bacteremia	0.22 (0.08-0.58)
Intra-abdominal	0.42 (0.19-0.92)
Skin/soft tissue	0.65 (0.17-2.47)
Pneumonia	1.11 (0.72-1.71)
Urinary tract	1.52 (1.02-2.26)

Conclusion: Mini root cause analyses may be a helpful tool for identifying -specific opportunities to reduce HO-CDI rates. We found a high rate of inappropriate testing, usually related to alternative causes for diarrhea such as laxative receipt or tube feeds. While rates of inappropriate antibiotic use were lower than has been reported elsewhere, the majority of opportunities for improvement related to overly broad-spectrum coverage. Urinary tract infections were most strongly associated with inappropriate antibiotic use preceding HO-CDI.

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800. Oral Vancomycin Prophylaxis Against Clostridioides difficile in Patients Admitted to a Tertiary Academic Medical Center

David B. Kopelman, MD[1]; Sharon B. Wright, MD, MPH[1]; Howard Gold, MD[1]; Preeti Mehrotra; Preeti Mehrotra; [1]Beth Israel Deaconess Medical Center, North Reading, Massachusetts

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Background: In an effort to more accurately diagnose *Clostridioides difficile* infection (CDI), many hospitals have switched to two-step testing algorithms that rely on nucleic acid amplification testing with reflex enzyme immunoassay for toxin. Additionally, oral vancomycin prophylaxis (OVP) against CDI is increasingly being used; initial studies focused on preventing recurrence in patients with a prior history of CDI, but OVP is also being studied in primary prevention. We hypothesized that following the implementation of two-step testing, clinicians may use OVP for prevention of a patient's first episode of CDI based on knowledge of prior PCR+/Toxin- testing.

Methods: We performed a single-center, retrospective cohort study of patients admitted to Beth Israel Deaconess Medical Center. We identified patients who received oral vancomycin once daily or BID for the prevention of CDI following implementation of two-step testing. Patients who received oral vancomycin as part of a taper following acute infection were excluded. We categorized rationale for prophylaxis based on clinical documentation and collected details of patients' CDI history, antibiotic exposure, and subsequent CDI testing during hospitalization.

Results: In the 12 months following implementation of two-step testing, there were 80 patients who received OVP during hospitalization (2 daily and 78 BID). The vast majority (73, 91.3%) had a history of CDI and received OVP for secondary prevention while receiving systemic antibiotics. There were only 3 patients (3.8%) without known clinical history of CDI whose clinicians documented prophylaxis based on previous PCR+/Toxin- testing. Patients on OVP received a mean of 4.1 systemic antibiotics during hospitalization. When continuing OVP for a finite period after discontinuation of systemic antibiotics, this was most commonly done for 2-7 days (16 of 26, 61.5%). 22 patients underwent stool testing for CDI while receiving OVP in the hospital and all resulted PCR-negative.

OVP Indication