

785. Association between Prevalence of Laboratory-Identified *Clostridioides difficile* Infections (CDIs) and CDI Antibiotic Treatment in U.S. Acute Care Hospitals, 2018

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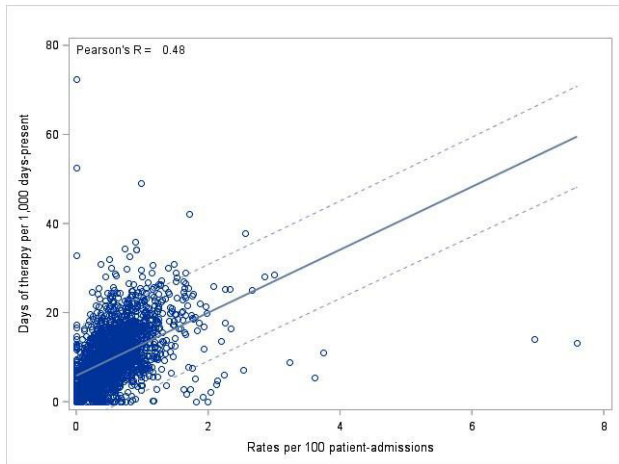
Session: P-32. HAI: C. difficile

Background: *Clostridioides difficile* infections (CDIs) are an urgent public health threat, accounting for 223,900 infections and 12,800 deaths in hospitalized patients annually. In early 2018, the Infectious Disease Society of America (IDSA) recommended oral vancomycin or fidaxomicin as the first-line antibiotics for CDIs. To track the uptake of IDSA's recommendations, we evaluated the association between CDI prevalence and use of first-line antibiotics in hospitals reporting to the Centers for Disease Control and Prevention's (CDC's) National Healthcare Safety Network (NHSN).

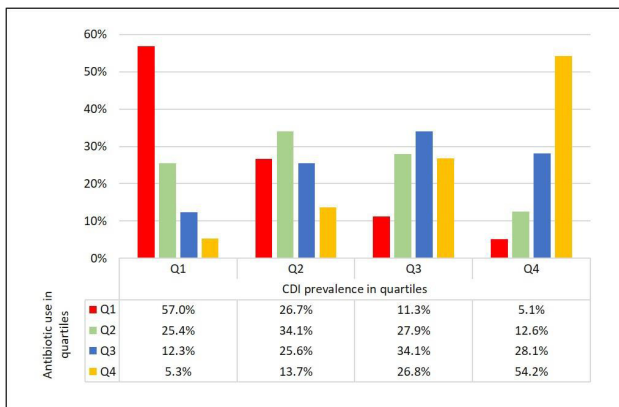
Methods: We matched 2018 hospital-level, NHSN data on laboratory-identified CDIs with NHSN antimicrobial use (AU) data for the same time period. Hospitals that submitted < 6 months of either data type in 2018 were excluded. The association between quarterly hospital-level CDI prevalence rates per 100 patient-admissions and use of CDI antibiotics (oral vancomycin plus fidaxomicin) per 1,000 days-present was evaluated using Pearson's linear correlation coefficient and using Goodman and Kruskal's gamma (G) on ordinal quartiles to assess rates of discordant pairs.

Results: Among the 2735 hospital-level quarters based on 714 hospitals included in the study, CDI prevalence (median: 0.46 per 100 patient-admissions) and CDI antibiotic use (median: 8.85 antibiotic-days per 1,000 days-present) demonstrated only a moderately positive correlation ($r = 0.48$). Among hospitals in the highest quartile for CDI prevalence, 5.1% were in the lowest quartile for antibiotic use. Among hospitals in the highest quartile for antibiotic use, 5.3% were in the lowest quartile for CDI prevalence, and 54.2% were in the highest quartile for CDI prevalence ($G = 0.60$; 95% CI: 0.57-0.63).

Correlation of hospital-level *Clostridioides difficile* infection (CDI) prevalence rates and oral vancomycin and fidaxomicin use in U.S. acute care hospitals, 2018



Distribution of hospital-level *Clostridioides difficile* infection (CDI) prevalence rates and oral vancomycin and fidaxomicin use in ordinal quartiles (Q1-Q4) to assess rates of discordant pairs



Conclusion: The moderate correlation and discordant rates suggest that vancomycin and fidaxomicin are less frequently used as primary antibiotics in some hospitals; whereas in others, CDI antibiotic use is occurring in the absence of positive

laboratory tests for CDI. To further investigate this discordance, there is a need to assess hospitals' prescribing and testing practices in an ongoing manner. These findings may be useful to serve as baseline for measuring progress of appropriateness of treatment and testing for CDIs.

Disclosures: All Authors: No reported disclosures

786. Diagnostic stewardship of C difficile PCR testing with two step algorithm-A rural community hospital experience

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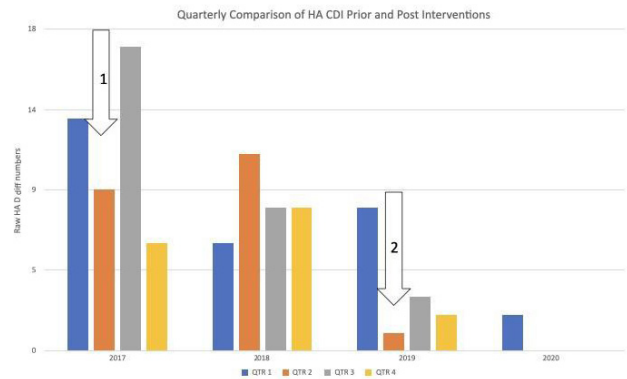
Session: P-32. HAI: C. difficile

Background: An estimated 15% of hospitalized patients are asymptomatic carriers of C. diff. Inappropriate testing can lead to over diagnosis, treatment, isolation & substantial financial penalties. Ours is a rural 310 bed hospital with nurse driven C. diff test ordering protocol. Due to inadvertent test ordering, we had an uptick in the HO-CDI incidence with rates as high as 0.94 per 1000 patient days in 2017. In order to streamline testing, we initiated an infection preventionist(IP) led diagnostic stewardship program which was implemented in two phases in 2017-2019

Methods: The phase 1 involved daily review by IPs regarding the legitimacy of PCR order for minimum 3 loose stools in 24 hours, use of laxatives, presence of symptoms. There were concerns nationally that then CDI risk adjustment model from NHSN in 2017 does not optimally account for the impact of specific CDI testing methods used by individual hospitals on CDI SIRs. Hence, in Jan 2018 NHSN's MDRO/CDI Protocol stated "Results of the final test that are placed in the patient's medical record should be used to determine whether event meets the CDI LabID defin". This led to phase 2 in mar 2019 which involved two step testing which started with C diff PCR assay with positive test reflexed to the toxin A/B assay.

Results: During the first phase, and a full year of the protocol in 2018, the number of completed PCR tests decreased to 626 (compared to 940 PCR tests in 2016) with an 34% decrease. In the year following implementation of the Diagnostic Stewardship, HO CDI decreased from 60 in 2017 to 43 events in 2018 with a reduction of 28%. Subsequently, HO CDI further decreased in 2019 to 28 with a reduction of 35%. Since the start of the project in 2017, HO CDI have decreased 54% in total. The reduction in 314 C diff PCR tests in the first year[2017-2018] led to a savings of \$8300 in lab supplies. No readmissions with C difficile infection documented within 30 days on patients who did not meet the criterion for testing. Significant decrease in the usage of C difficile antibiotics. After the start of the two step test, we have seen a precipitous drop in our HO-CDI rates to less than 0.3 per 1000 pt days by the end of 2019.

Quarterly comparison of HO CDI incidence for 2017-2020



HO CDI incidence before and following phase 1 and phase 2 interventions

