

Early Hospital Onset *Clostridioides difficile*: Do not wait to test. Findings from a systemwide hospital chart review.

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Abstract

Clostridioides difficile (*C. diff*) is the most common cause of diarrhea in a healthcare setting. Patients are at a higher risk of *C. diff* infection (CDI) if they have been on antibiotics, have a prior history of CDI, have had extended healthcare stays, advanced age, and serious underlying illness. The National Healthcare Safety Network (NHSN) utilizes a simplified algorithm to determine community onset (CO) versus hospital onset (HO) CDI cases via the Laboratory Identification (LABID) Event module. Utilizing NHSN LABID definition for CO-CDI and HO-CDI, a multi-state hospital system, extracted CDI cases from January 2022 – June 2023. HO-CDI cases, defined as a positive *C. diff* stool specimen collected on or after hospital day 4 were evaluated. Early hospital onset cases were defined as HO-CDI cases identified on days 4, 5, and 6 of the patients stay. A subset of patient charts was reviewed further and consisted of specific investigative abstraction questions. From January 2022 – June 2023, 707 HO-CDI cases were identified for the system. Early HO-CDI accounted for 33% (n=234) of these cases. The subset of charts reviewed (n=78), demonstrated 29% of the patients had arrived with nausea, vomiting, and/or diarrhea, 17% had a prior history of CDI within the past six months, and 28% of the cases lacked documentation of stool frequency, consistency, and other descriptors prior to testing. Early HO-CDI chart review revealed a delay in testing when the patient arrived with signs and symptoms, including diarrhea and history of CDI. Timely considerations for testing patients with CDI symptoms or history of CDI would accurately capture CO-CDI cases, leading to rapid treatment options and ensure faster isolation. Additional focus on stool documentation regarding frequency and consistency may assist in identifying CO-CDI cases.

Objectives

Describe and analyze early HO-CDI in a multi-state hospital system.

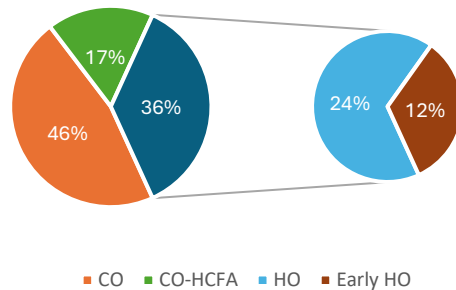
Study Design

Utilizing CDC NHSN LABID definition for CDI, a multi-state hospital system, extracted cases from January 2022 – June 2023. HO-CDI cases, defined as a positive *C. diff* stool specimen collected on or after hospital day 4 and further defined as early hospital onset as days 4, 5, and 6 of admission. A subset of cases were reviewed for onset of symptoms and potential risk factors.

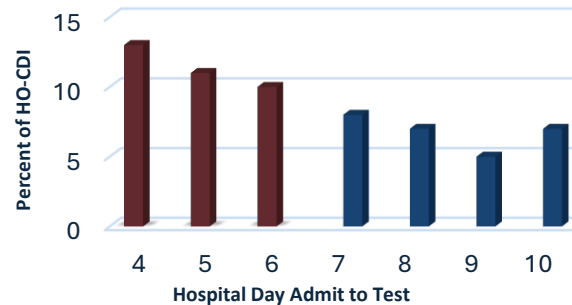
Results

From January 2022 – June 2023, there were 917 community onset, CO-CDI, cases, collected on hospital day 1 –3. In addition, 333 CO-HCFA, community onset healthcare facility associated cases identified, defined as a case that discharged ≤ 28 days from the facility. Lastly, 707 HO-CDI, a positive stool after hospital day 4, cases identified for the system. Early HO-CDI accounted for 33% (n=234) of these cases. The subset of early hospital onset charts reviewed (n=78), demonstrated 29% of the patients had arrived with nausea, vomiting, and/or diarrhea, 17% had a prior history of CDI within the past six months, and 28% of the cases lacked documentation of stool frequency, consistency, and other descriptors prior to testing.

LABID CDI Jan 2022 – June 2023



Percent of HO-CDI by Hospital Day Admit to Test, Jan 2022 – June 2023



Variable	% of case reviewed
Admit from home	63%
Hospitalized past 6 months	69%
Arrived with nausea, vomiting, diarrhea	29%
History of CDI, last 6 months	17%
Chart lacking documentation of stool descriptor	28%
Laxatives given prior to test	56%

Conclusion

Early HO-CDI chart review revealed a delay in testing when the patient arrived with signs and symptoms of possible CDI, including diarrhea and a history of CDI. Study limitations include variable/limited data within the electronic medical record. Rapid *C. diff* testing for patients with CDI symptoms, and CDI history, could accurately capture CO-CDI cases, enabling, rapid treatment options and timely institution of infection prevention protocols. In addition, appropriate stool documentation regarding frequency and consistency may assist in identifying CO-CDI cases. This study found that patients admitted with diarrhea, should have testing done immediately to differentiate between CO and HO, if CDI is suspected. Clinicians should consider promptly testing patients with prior history of and if they are symptomatic. Only patients with unexplained, unformed stools (diarrhea) should be tested for CDI. Patients who have been on any laxatives in prior 48 hours, should not be tested, unless there is high clinical suspicion for CDI.

References

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Disclosures

No disclosures