Optimizing a Clostridium difficile Screen for Intensive Care Unit Admissions

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Recommended Citation
Natour, Mary Katherine V. and Smith, Jennifer, "Optimizing a Clostridium difficile Screen for Intensive Care Unit Admissions" (2024). Graduate Publications and Other Selected Works - Doctor of Nursing Practice (DNP).
https://trace.tennessee.edu/dnp/108

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Excluding patients who had no risk factors and one or more confounding factors from CDI isolation and testing improved accuracy while maintaining sensitivity of the screening tool. In this sample, this creates an opportunity to spare ten patients from isolation and testing. It also saves the hospital $11,000 in isolation measures.\(^5\)

**METHODS**

- The Evidence-based Practice Improvement process model was used as the framework for this project.
- Literature search and critical appraisal demonstrated good and consistent evidence supporting use of multi-step screening for CDI and administration of CDI screening by bedside nursing staff.
- CDI risk and confounding factors were collected during literature review to develop a clinical decision-making algorithm for CDI isolation and intervention.
- Outcome measures screening tool accuracy and selectivity were measured for a 3-month implementation period and compared against the current tool.
- Dissemination was performed to the ICU director and infection prevention committee at the project site.

**RESULTS**

- During the 3 months prior to implementation, 247 patients were selected for isolation and intervention, 32 of whom tested positive (12.9% accuracy).
- During the 3 months of prospective data collection: 1. The current tool determined 82 patients should be selected, 15 of whom were positive (18%).
- The first intervention criteria determined 37 patients should be selected, 6 of whom were positive (16% accuracy, 60% relative selectivity).
- Two different criteria were created based on the selected contextual factors.
- The site for this evidence-based practice improvement project is a 73-bed ICU in a nonprofit hospital in downtown Knoxville.
- Prior to the implementation of the practice change intervention, every patient with any loose stool in the previous 24 hours was selected for CDI isolation and testing. This over-selection led to compliance <50%.
- The purpose of this project was to increase the specificity of the screening tool while maintaining selectivity.
- The aims of the project were:
  - Maintain sensitivity of the current screening tool
  - Decrease unnecessary intervention and isolation by at least 2%.

**CONCLUSIONS**

- Accounting for contextual factors can improve CDI screening if done in such a way to improve accuracy while maintaining selectivity.\(^4\)
- Excluding patients with no risk factors and 1 or more confounding factors improved the screening tool on both of those counts.

**ACKNOWLEDGEMENTS/FUNDING DISCLOSURE:**

No funding was received for this project.

**MAINTENANCE**

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**REFERENCES**

1. Clostridium difficile infection (CDI) is the most common healthcare-acquired diarrhea\(^1\) and is associated with 14,000 deaths annually in the United States.\(^2\)
2. CDI detected within the first 3 days of hospital admission is considered community-acquired and after 3 days is considered healthcare-acquired. This distinction determines whether treatment is reimbursable or not.
3. Early detection enables healthcare workers to isolate and intervene promptly, preventing both spread and unnecessary intervention and testing. It also saves the hospital $11,000 in isolation measures.\(^5\)
4. Optimal screening for CDI and administration of CDI isolation and lab testing in patients with one or more loose stools in the previous 24 hours flag the comparison screening tool. In this sample, this creates an opportunity to spare ten patients from isolation and testing. It also saves the hospital $11,000 in isolation measures.\(^5\)
5. CDI risk and confounding factors were collected during literature review to develop a clinical decision-making algorithm for CDI isolation and intervention. Accounting for contextual factors can improve CDI screening if done in such a way to improve accuracy while maintaining selectivity.\(^4\)
6. Excluding patients with no risk factors and 1 or more confounding factors improved the screening tool on both of those counts.