Improving *Clostridium Difficile* detection at Medical City Arlington: A Quality Improvement Project

Bremmy Alsbrooks, DO; Nur-Alhuda Shahub, DO; Shabaz Mallick, MPH; Jesse Brown, BSN-RN / LP; Jennifer Hager, MPH, CIC; Afsha Rais, MD, FAAFP

**Background**

Hospital-acquired *Clostridium difficile* infection are one of the most costly hospital acquired infections. From 1/1/2022-12/31/2022, there were 19 C diff cases at MCA.

Some effective strategies for prevention include hand hygiene (sink installation, improved signage, education initiatives), environmental cleaning (such as cleaning rooms twice a day at 2 AM and 2 PM at MCA), isolation of C diff patients to private rooms with signage, contact precautions (with gloves, gowns available at the door such as at MCA), antibiotic stewardship, and staff education.

Reasons for this uptick in cases from previous years could be waiting too long for collection (where a patient has C diff on admission, but does not receive testing until several days later), antibiotics, environmental (for example, using the same toilet brush to clean bathrooms on the floor as well as the bathroom in a C diff patient’s room, cleaning high touch areas less than two times during the day, etc.), or staff education.

**Methods**

From our meeting with the Infection Prevention team, there is a possibility that the recent cases in question were not hospital acquired, but resulted from failure to test a sample within the first three days or admission. Therefore, we sought to test this theory by researching staff understanding of the C diff MCA protocol.

- To improve detection of C diff early in hospital course to appropriately identify hospital-acquired vs community-acquired C diff.
- Educate residents and other hospital staff on appropriate C diff.
- Improved care for C diff patients

A survey was distributed during scholarly activity presentations in resident didactics, lunch and learns, and during various other presentations throughout the hospital. Questions were a mix of free response and yes or no.

**Questions included:**
1. In your opinion, is C diff an issue at MCA. Why or why not?
2. Describe the C diff process from your standpoint.
3. When you see a patient with loose stools, what is your initial thought process?
4. Are you familiar with MCA’s C Diff work-up/treatment plan/protocol?
5. If MCA does have a C Diff issue, what factors are contributing to this issue?
6. Regarding the above question, how could MCA improve this issue?
7. If a patient presents within 24 hours of admission with CC of loose stools, would you collect stool samples for C Diff? Why or why not?

**Results**

- Approximately 196 responses were obtained from the survey and n=26 identified as physicians
- Although there was variability in the understanding of what contributed to the uptick in cases at MCA, roughly 50% of physician responses included a misunderstanding of the C diff protocol at MCA, specifically with regards to when testing should take place. These responses came from both attending physicians and residents.

**Conclusion**

With these results, we conclude that one of the main issues affecting hospital acquired infections is staff education and when to test the sample. Therefore, we opted to create an infographic which would then be placed in high traffic areas, including the resident lounge and physician meeting room at the family medicine clinic. Through this infographic, we plan to better educate physicians about the MCA C diff testing criteria and to introduce our survey in one month to ensure that the information has been effectively relayed.

**Limitations:**
- The project was limited to Medical City Arlington, and is purely based on the Medical City Arlington data set.
- The infographic did not include the ticket to test that is submitted by nursing staff education.
- Meditech continues to face some challenges in the ordering C diff testing.
- The infographic did not distribute to resident spaces, nurse stations, etc. that is distributed to some of other hospital staff members.

**References**

Medical City Arlington: Policy P.II.109, *Clostridium Difficile* Prevented by North Texas Division Infection Prevention. Date Reviewed: 06/2018.

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