When *Clostridioides (Clostridium) difficile* Patients are Non-compliant: Responding to Potential Transmission of *C. difficile* in a Behavioral Health Unit

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Abstract

Background: *Clostridiodes difficile* is transmitted by contaminated environmental surfaces and breaches in hand hygiene and isolation protocols. The transmission-based precautions encouraged in acute care facilities to prevent spread of *C. difficile* may not translate well to behavioral health units (BHUs), where implementation of infection control measures can be more challenging. Patients in BHUs receive treatment in a shared environment: eating, socializing, and participating in group therapy sessions outside of their rooms. In its BHUs, Legacy HealthEast St. Joseph's Hospital (St. Joseph's) endorses Modified Enteric Precautions. These precautions take into consideration the patient movement necessary in a BHU, but require that patients be clean, cooperative, contained, and continent (the Four C's) to leave their room for treatment and meals. In June 2019 a potential cluster of *C. difficile* in a BHU was investigated by Infection Preventionists and unit leadership.

Methods: Using Epic Icon, St. Joseph's Infection Preventionists perform active surveillance for *C. difficile* in inpatient units, including BHUs. On June 27, 2019, a healthcare-associated *C. difficile* infection (CDI) was detected on a BHU in a patient who had been hospitalized for greater than 70 days (Patient A). Within three days of the positive culture, two additional patients housed on the same wing began having loose stools (Patients B and C). All three patients were placed on Modified Enteric Precautions, requiring that staff don gloves and gowns when administering patient care, and wash hands with soap and water. Environmental services was notified immediately and conducted a thorough bleach clean of the unit. Staff were educated and unit leadership increased communication to team members. Additional guidelines were given for Patient A, who did not meet the Four C's, refusing to stay in the room or wash hands. These additional guidelines included one-on-one monitoring and special focus around mealtimes.

Results: Patients B and C did not test positive for *C. difficile*. No additional cases were detected.

Conclusion: Potential outbreaks and clusters of disease in BHUs require specialized infection control recommendations suitable for the patient population and sustainable for staff. It is important to involve Environmental Services quickly, as patients regularly ambulate throughout the unit and have limited access to hand hygiene. Alerting staff and adherence to Modified Enteric Precautions are paramount in preventing spread of CDI in BHUs.

Background

- *Clostridiodes (Clostridium) difficile* infection is the leading cause of healthcare-associated diarrhea.
- *C. difficile* can be transmitted by contaminated environmental surfaces and breaches in infection prevention protocols such as hand hygiene.[1]
- Transmission-based precautions called Enteric Precautions are recommended in hospitalized patients with a positive laboratory test for *C. difficile.* These precautions include gowning and gloving at the door to a patient room, washing hands with soap and water upon exit, and cleaning the patient room with bleach in addition to Standard Precautions.
- Traditionally recommended Enteric Precautions do not translate well to behavioral health units (BHU)
- Patients in BHUs are treated in a shared environment in which eating, socializing, and group therapy occur outside the patient room.
- Hand hygiene can be difficult in BHUs due to lack of sink space and limited access to hand hygiene products, especially alcohol-based hand sanitizers, due to patient population.
- Legacy HealthEast St. Joseph's Hospital (St. Joseph's) houses four inpatient BHUs.
- In its BHUs St. Joseph's Hospital infection control currently endorses Modified Enteric Precautions.
- Modified Enteric Precautions take into account the patient movement necessary in a BHU but require a patient to be clean, cooperative, contained, and continent (the Four C's) to leave their room for treatment and meals.
- In June of 2019 a potential cluster of *C. difficile* was investigated in the 14-bed geriatric psychiatric unit. (Figure 3).

Methods

- Infection Preventionists at St. Joseph's Hospital performs active surveillance for *C. difficile* in inpatient units, including all BHUs.
- A hospital-onset case of *C. difficile* infection is defined by the National Healthcare Safety Network as a positive *C. difficile* test on day 4 or later of admission.[2]
- On June 27th, a hospital-onset *C. difficile* case was confirmed by *C. difficile* polymerase chain reaction (PCR) testing in the geriatric psychiatric unit at St. Joseph's Hospital (Patient A). The patient had been symptomatic for roughly two days, and hospitalized for greater than 70 days.
- Also on June 27th, two additional patients housed on the same wing developed loose stools (Patients B and C). (Figure 2).
- All patients were placed in Modified Enteric Precautions based on current Legacy HealthEast recommendations. (Figure 4).
- Environmental services conducted a thorough bleach clean of the unit on June 27th. (Figure 1).
- Unit staff received just-in-time education regarding transmission and prevention of transmission of *C. difficile.*
- Unit leadership increased communication to staff.
- Patients B and C met compliance requirements to remain on the unit in Modified Enteric Precautions.
- Additional guidelines were given for Patient A, who did not meet the "Four C's", but who would not have received adequate behavioral health care on a medical floor. (Figure 4).

Results

- Patient B was not tested for *C. difficile:* loose stools cleared up before a sample was collected to test.
- Patient C was not tested for *C. difficile*: loose stools cleared up before a sample was collected to test.
- No additional patients on the geriatric psychiatric unit developed symptoms of *C. difficile* infection.
- Alternative infection prevention practices were utilized for a patient who did not meet the necessary compliance requirements so the patient could remain on the unit.

Fig. 1 Timeline of symptom onset in potential cluster of *C. difficile* in a Behavioral Health Unit, June 2019

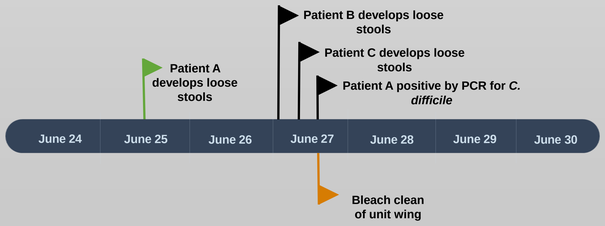

Fig. 2 Epidemiological curve of symptomatic patients in potential cluster of *C. difficile* in a Behavioral Health Unit, June 2019

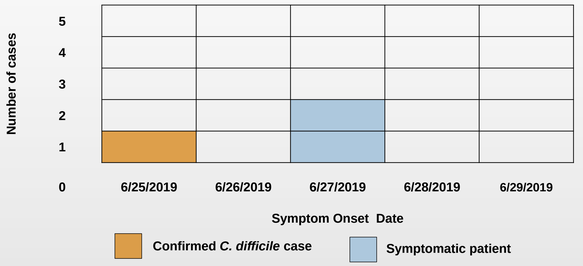

Fig. 3 Layout of Behavioral Health Unit with potential cluster of *C. difficile*, June 2019

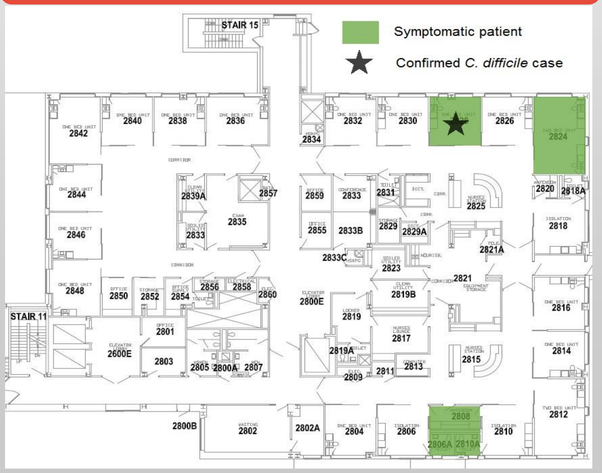

Fig. 4: Patient A—Additional recommendations for a non-compliant patient with confirmed *C. difficile*

- Patients with *C. difficile* residing in a BHU at St. Joseph's Hospital are allowed to remain on the unit and leave their room for treatment, meals, and social activities if they can demonstrate compliance with the "Four C's": be clean, continent, contained and cooperative.
- In severe situations a patient could be transported to a medical unit or requested to remain in their room.
- Patients B and C were able to comply with these measures.
- Patient A refused to comply with hand hygiene etiquette or remain in the patient room.
- It was decided that it would be detrimental to Patient A's treatment to transfer to a medical floor.
- Management of Patient A was a tailored approach:
  1. Patient A agreed to remain in the patient room except for mealtimes.
  2. A one-to-one staff to patient protocol was followed, with a staff member accompanying Patient A throughout the symptomatic time period, encouraging hand washing and wiping down areas the patient touched.
  3. Mealtimes were conducted as close to the patient room as possible.

Conclusion

- Potential outbreaks and clusters of infectious disease in BHUs require specialized infection control tailored to the patient population and sustainable for staff.
- It is important to involve Environmental Services quickly in events of potential clusters of infectious disease.
- BHU patients regularly ambulate throughout the unit and have limited access to hand hygiene.
- In potential clusters of infectious disease such as *C. difficile,* which is spread by contaminated surfaces and breaches in hand hygiene etiquette, a bleach clean of high touch surfaces in the unit is recommended.
- Staff understanding and adhering to Modified Enteric Precautions was necessary to prevent potential spread of the bacteria.
- It is important to look to innovative infection prevention with involvement of unit staff, especially in situations of non-compliant patients with *C. difficile.*

References

[1]David J. Weber, M. M., William A. Rutala, P. M., Melissa B. Miller, P., Kirk Huslage, R. B., & Emily Sickbert-Bennett, M. (2010). Role of hospital surfaces in the transmission of emerging health care-associated pathogens: Norovirus, Clostridium difficile, and Acinetobacter species. *American Journal of Infection Control*, S25-S33

[2]National Healthcare Safety Network (NHSN) 2018. *Multidrug-Resistant Organism & Clostridium difficile Infection (MDRO/CDI) Module.* Centers for Disease Control and Prevention.

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