

# Decisions, Decisions: Creating the Standard Work to Reduce Hospital Acquired *Clostridium difficile* Infections



Duke Raleigh Hospital

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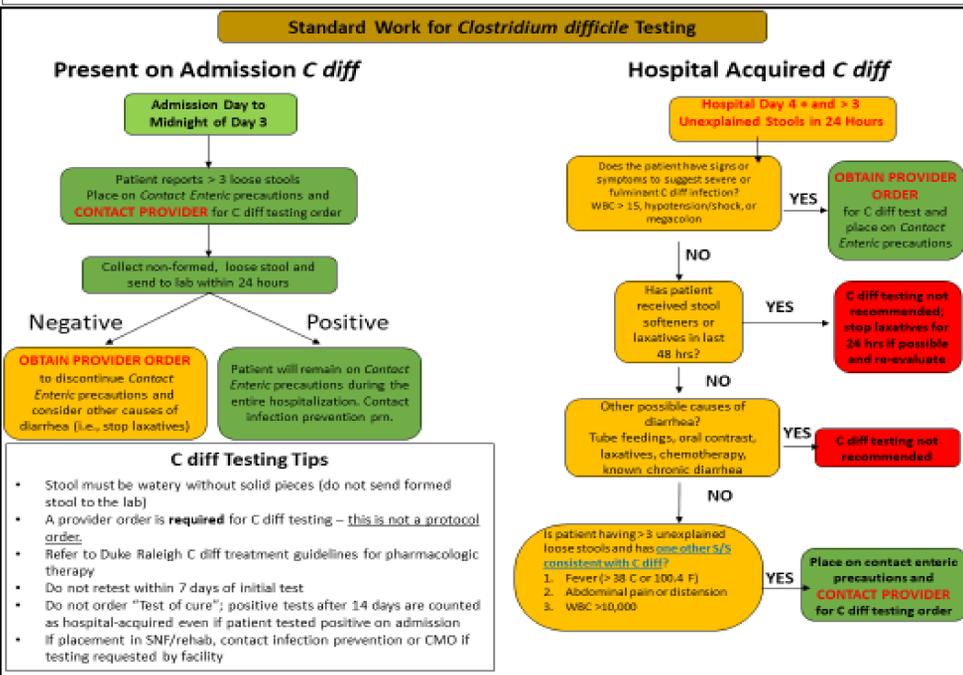
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## BACKGROUND

Like many hospitals we had an increase in hospital acquired infections (HAI) due to *Clostridium difficile* (*C diff*). In addition to standard infection prevention measures, we focused on antibiotic stewardship to attempt to decrease the rate of *C diff* infections, but did not see improvement. We challenged ourselves to become a top decile performer by focusing testing on the "right" patients to reduce our overall rate.

## AIM

To quickly identify patients with a C Diff infection on admission and to minimize testing on patients who are likely colonized with C Diff



## DESIGN

We designed a flow chart and called it our **Standard Work**. We focused on separating the patients with an infection present on admission from the patients that met the definition of hospital acquired, as defined by the National Health Safety network (NHSN) guidelines. Through data analysis, we identified patients that had a positive culture on days 4 or 5, likely representing an infection that was present on admission as well as patients that did not have clinical signs of infection, representing a colonized patient. In creating the **Standard Work**, we involved front line staff to be sure the work flow made sense and the process could be interpreted correctly. We partnered with our microbiology lab so we could review all C Diff specimens ordered before they were tested, to identify the hospital day of the collection and whether the patient had any of the literature supported signs of a clinical infection. With this information we would communicate with providers and nurses about the appropriateness of the test order and to provide education.



## PROCESS

Infection prevention did a literature review of best practices in preventing *C diff* HAI. We formed an interdisciplinary team consisting of pharmacy, microbiology, infection prevention nurses, hospitalists, infectious disease providers and our chief medical officer to review the data. We looked at what we already had in place for *C diff* prevention and what we needed to do to improve C diff testing to identify those patients with C diff infection and minimize testing of patients likely to be colonized. We retrospectively reviewed 90 days of all *C diff* cases to identify opportunities for improvement. We then reviewed our findings with the Nursing Executive Council, Clinical Team Leader Committee and presented the data to our President and Chief Nursing Officer.

## OUTCOMES

We compared data from the previous calendar year to the current year. The Standard Work for testing began in earnest in July 2018. In the 3rd quarter of 2017 (July, August and September), we had 11 HAI *C diff* cases. During the same time period in 2018, we had 7 HAI *C diff* cases. This difference represents a **8% decline in C diff cases**. Our charts also demonstrate a downward trend for HAI CDI over the entire current year.

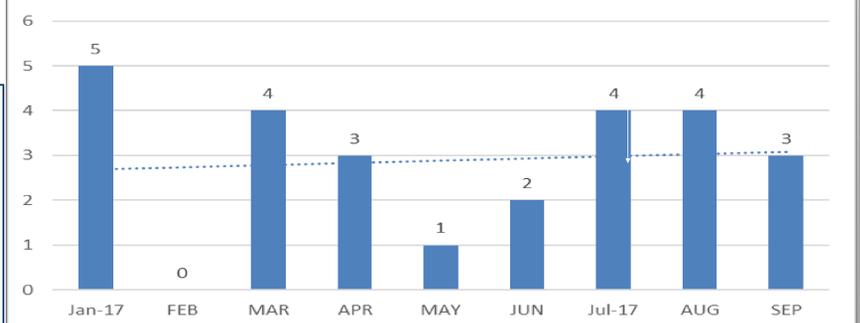


NHSN Definition of Hospital Acquired C diff infection:

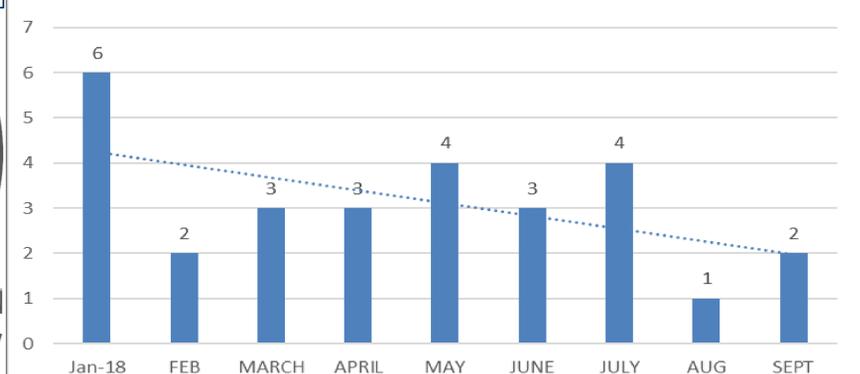
- A specimen collected >3 days after admission to the facility.



CY 2017 CDI Q1-Q3



CY18 CDI Q1-Q3



## LESSONS LEARNED

Developing standard work is a joint effort involving agreement on best practice as a partnership with providers, nursing, labs and our infection prevention team. Through data analysis we identified opportunities to capture C Diff infections that were present on admission and to avoid testing patients that did not meet clinical criteria as they may be colonized. Laminated posters and fliers with the standard work as well as in-services to hospitalists and nurses. This collaborative process continues and we expect sustained improvement in our infection rates.