Clostridium difficile Colonization Screening

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Problem

Patients admitted for a blood and marrow transplant (BMT) are immunocompromised and have typically had multiple previous hospital admissions. These factors make them high risk for developing active Clostridium difficile (C diff) infection as well as potentially being asymptomatically colonized with it. Due to these factors, our BMT unit had the highest rate of hospital-acquired C diff infections in our entire tertiary care health system.

Background

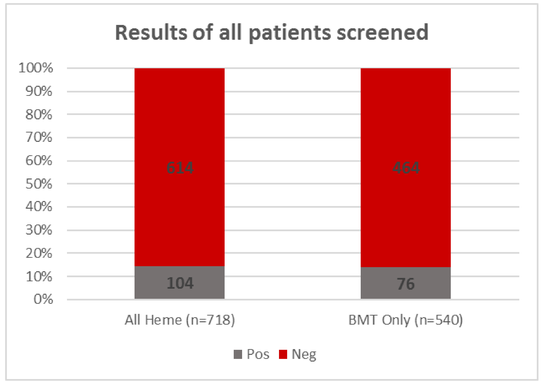
- Evidence about asymptomatic colonization suggested there may be a role for screening these patients upon admission
- In 2015, a study was conducted at our institution to show our current PCR test is an effective screening tool for formed stool.
- A joint effort between the BMT program and Epidemiology resulted in the development of a guideline which includes:
  - Population to be screened
  - Isolation practices
  - Empiric and symptomatic treatment practices
  - Re-testing practices

Process

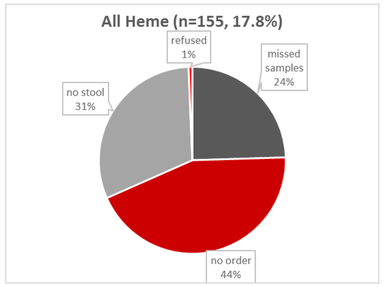
- Screening of all patients with a hematology diagnosis, both benign and malignant
- A new electronic order was created to identify the specimen as a screen so that formed stools would be processed.
  - This order was built into the BMT admission order sets within a month of beginning the screens
- In accordance with the National Healthcare Safety Network (NHSN) guidelines, specimens had to be collected within the first 3 days of hospital admission in order to be counted as a screen and not a hospital-onset infection.
- Records of all admissions, test results, omitted tests, and subsequent test results were maintained

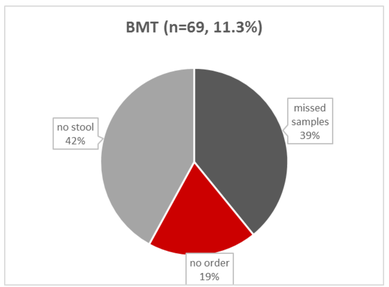
Results

Results were examined looking at all hematology patients and BMT patients only.



The percentages of all hematology patients compared to BMT patients only were nearly identical. This does speak to the generalizability of these results across the hematology population.





Reasons for specimen omission were examined. There was a significantly smaller percentage omitted in the BMT patient only analysis. The major difference was in the number of specimens omitted due to the lack of an order.. This speaks to the necessity of building this screening into admission order sets when implementing a screening process..

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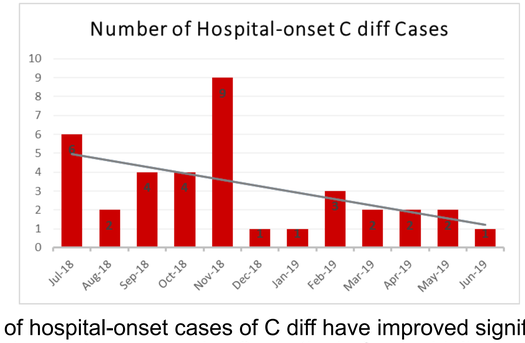
Additional Results

16 patients developed hospital-acquired C diff during the recorded period. 1 was collected after a missed admission specimen, 1 was collected after no admission specimen was ordered, and 14 were ordered after a negative screening sample had been collected.

All 14 positive specimens collected after a negative admission screening were on BMT patients. This potentially speaks to the overall increased infectious risk with the BMT population.



The number of hospital-onset cases of C diff have improved significantly as is shown above when comparing 6 months before guideline implementation and 6 months after.

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