Evaluation of the microbiology lab addressing physicians regarding *Clostridium difficile* testing

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Introduction

Hospital acquired *Clostridium Difficile (C. difficile)* rates have been on the rise over the past decade. Through the antibiotic stewardship program (ASP) at Sacred Heart Hospital, methods have been implemented to make the ordering process of *C. difficile* tests more efficient eliminating inappropriate testing.

Background / Objectives

C. difficile is an anaerobic gram positive spore-forming bacillus organism that can cause associated diarrhea and pseudomembranous colitis. According to the guidelines, average U.S. hospitalization and treatment costs are between $2,992 - $29,000 with an increased hospital stay of between 2.7 – 21.3 days.

C. difficile and their spores are found in feces and ca be spread through the hands of patients and healthcare workers through fecal to oral route. In healthy adults, the normal bacterial flora can neutralize toxins and protect against *C. difficile* colonization and disease. Antibiotics alterate normal GI flora making a patient more susceptible to *C. difficile*. Primary causative antibiotics include clindamycin, levofloxacin, and cephalosporins.

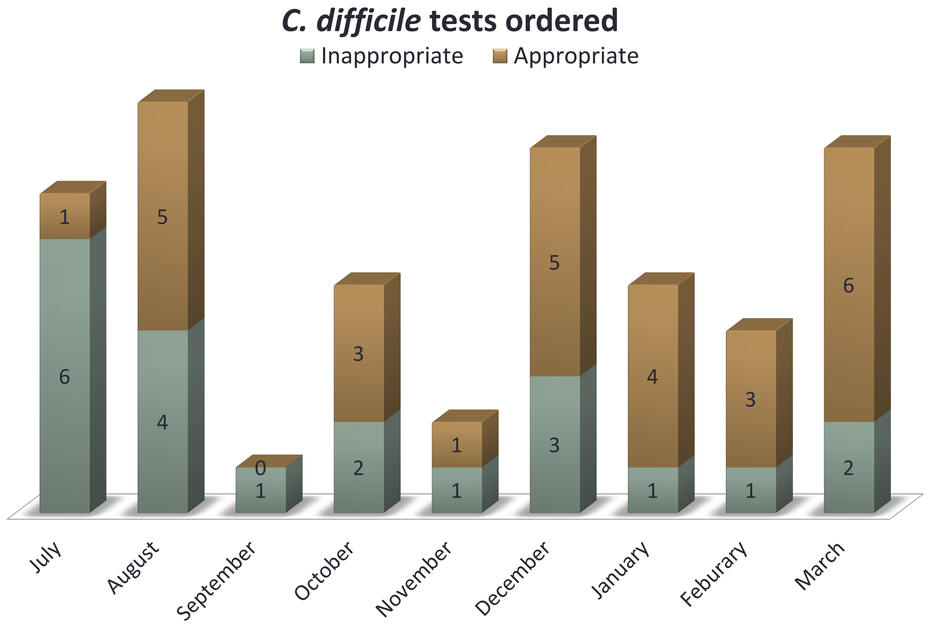
Primary Objective

- To decrease inappropriate ordering of *C. difficile* tests

Methods

This was a single-center retrospective study conducted at Sacred Heart Hospital which is a 566-bed acute care facility. Participants classified as having hospital acquired *C. difficile* were included in this study. The ordering process of *C. difficile* tests were analyzed on a monthly basis based off data collected between July 2015 and March 2016 where 49 patients were reviewed. In November 2015, the microbiology lab began contacting physicians/nurses when tests were ordered to prevent inappropriate testing. An inappropriate test was defined as a *C. difficile* test order after a prokinetic agent, laxative or stool softener had been administered within 24 hours before sampling. Data was collected pre and post implementation of this process and analyzed by ASP. A statistical analysis was performed using the chi square test for categorical data. A p-value of <0.05 was used to determine statistical significance.

Results



Results

After 4 months since implementation of this process, inappropriate tests ordered for the *C. difficile* toxin in hospital acquired participants has dropped from 30.3% with a p-value of 0.03 so this was deemed statistically significant.

Inappropriate test orders	
Pre-Implementation	Post-Implementation
July – November	December – March
14 / 24	7 / 25
58.3%	28%

Conclusion

The amount of inappropriate tests ordered has decreased by 30.3% resulting in a cost savings to the hospital. Having fewer inappropriate tests also results in less false positives eliminating the treatment for patients who are colonized versus infected. The process will continue to be executed and alternative methods of decreasing *C. difficile* rates will be investigated by ASP.

Disclosures

The authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities.