An Educational Intervention to Reduce Inappropriate Testing for Hospital-Acquired *Clostridium difficile* Infection

Abraham Baidoo MD, Katrina Siemiesz MD, Ben Maynard MD, Eleanor King MD
Wayne State University School of Medicine, Department of Family Medicine & Public Health Sciences

Background

- *Clostridium difficile (C. diff)* is a spore-forming bacterium that is transmissible within hospitals and can cause life-threatening *Clostridium difficile* infection (CDI).
- A prior project exploring rates of hospital-acquired CDI (HACDI) at Ascension Providence Rochester Hospital (APRH) found that inappropriate testing contributed to elevated rates of HACDI.
- This included testing patients with formed stools and patients who received laxatives. Inappropriate testing wastes resources and causes overdiagnosis of HACDI in patients who are colonized.
- APRH established a policy that includes parameters to reduce inappropriate testing for CDI. We hypothesized that educating staff on the policy would lower rates of inappropriate testing.

Quality Improvement Objectives

- **Long-term**: educating staff on the testing policy would lower rates of inappropriate tests.
- **Current**: exploring the reasons for continued higher rate of inappropriate testing in order to address confounding factors.

Plan

- Baseline data was collected on *C. diff* tests ordered in December 2020.
- We counted tests that were completed on patients who had taken laxatives as well as tests ordered on patients with formed stool.

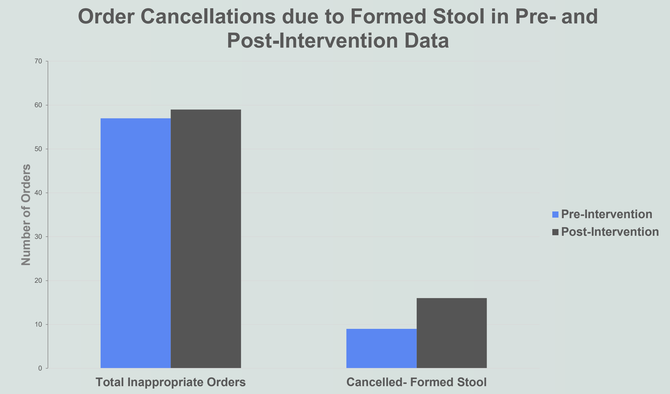
Do

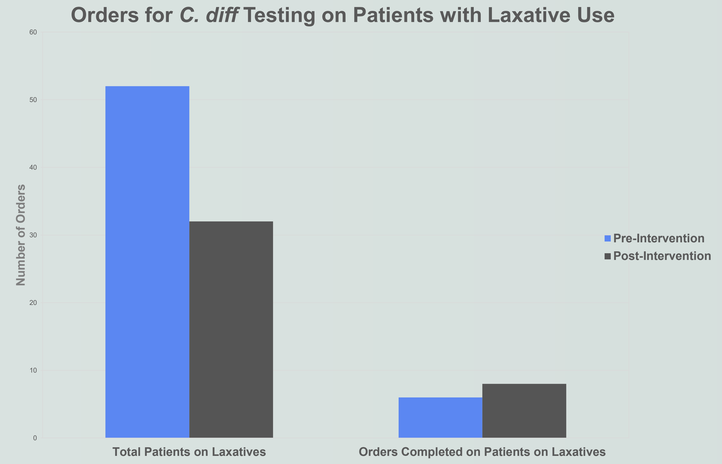
A 10-minute presentation with video aid on the testing policy was developed and given to nurses and physicians.
Three areas were highlighted:

1) Patients receiving laxatives, stool softeners, or enemas within 48 hours should not be tested,
2) Patients with formed stool should not be tested,
3) Patients must have clinical indications consistent with active CDI to be tested.

Data was compared to pre-intervention data.

Study





Act

- For the pre-intervention month, 57 orders were designated “inappropriate” by the lab and nine of these (15.8%) were due to the stool being formed.
- We reviewed an additional 52 charts of patients taking laxatives, and *C. diff* testing was completed on 6 patients (12%) with 1 positive finding.
- Post-intervention, 16 of 59 inappropriate tests were due to formed stool (27.1%). There were 8 tests completed in 32 patients on laxatives (32%) with 1 positive finding.

Discussion

- Inappropriate testing increased during our study period.
- Data revealed a cyclic pattern of *C. diff* testing with higher rates in the winter months, potentially confounding our results.
- A single educational session may not have been sufficient to communicate to the large group of providers at our hospital.
- Year-by-year variations in *C. diff* testing likely exist, meaning multiple months and years of data will need to be collected.

PUBLIC HEALTH IMPLICATIONS

- *C. diff* tests have financial implications to health-care systems. Materials, time spent collecting and transporting add to costs.
- Further teaching should include financial data and cost estimates.