**Background**

*Clostridium difficile* infection (CDI) is the most common cause of infectious diarrhea in the healthcare setting and CDI Laboratory ID (Lab ID) events are reportable to Centers for Medicare and Medicaid Services through the National Healthcare Safety Network.

Diagnostic stewardship can have a significant effect on CDI Lab ID event incidence by decreasing false-positive results.

The placement of a bowel management system (BMS) can lead to transient loss of anal sphincter muscle tone leading to symptoms of diarrhea. Clinicians may falsely believe that the patient has CDI and send stool samples for testing. This may lead to false-positive CDI Lab ID events.

**Methods**

We conducted a retrospective evaluation of all Hospital-Onset (HO) CDI Lab ID events from October 2016-March 2018 at the University of Alabama at Birmingham (UAB) Hospital.

We evaluated the effect of infection prevention interventions and computer-assisted decision support diagnostic stewardship on incidence rates using Poisson regression analysis.

We also determined who among the patients with HO Lab ID events had a BMS in place within 48 hours and 7 days of the time the *C. difficile* testing assay was ordered.

Severity of illness was determined by the presence of fever, leukocytosis, >3 liquid stools within 24 hours of the LAB ID event. We also determined the proportion of patients who experienced resolution of illness within 48 hours (rapid response) and if treatment for CDI was provided.

**Results**

A sustained low and decreasing HO-CDI incidence was observed from 2013-2017 (7.9, 6.0, 7.1, 6.5, 5.2 CDI/10,000 patient days, p=0.01).

CDI Lab ID event incidence decreased from 6.5 to 5.2 CDI events/10,000 patient days, p=0.009 during the 5 quarters before diagnostic stewardship was implemented vs the 5 quarters post-implementation.

Evaluation of the 221 HO-CDI Lab ID events that occurred post-implementation of diagnostic stewardship for potential false-positives are shown in Table 1.

**Conclusion**

We observed a significant decrease in CDI Lab ID events after implementation of a computer-assisted decision support tool for *C. difficile* testing.

An evaluation of all CDI Lab ID events during the time period was conducted. Our data shows that a majority of patients with BMS placed within 48 hours of testing and patients with BMS placed within 7 days of testing experienced rapid resolution of their symptoms (58%, and 64%, respectively).

Despite success with implementation of diagnostic stewardship, we have discovered that the use of BMS may contribute to a proportion of false positive CDI Lab ID events.

**References**
