Strategies to Reduce Hospital-Onset *Clostridium difficile* in an Academic Cancer Hospital

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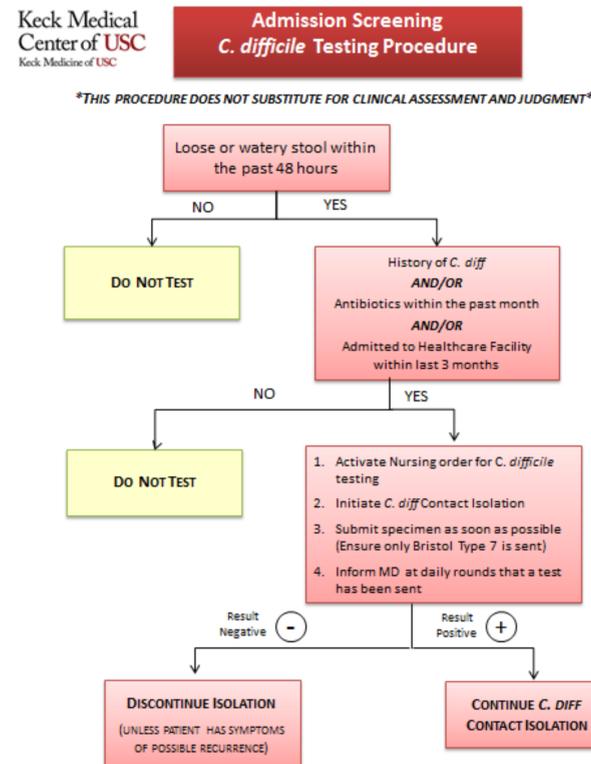Keck Medical Center of USC

Background

Incidence of Hospital-Onset *Clostridium difficile* Infection (CDI) in our 60-bed academic cancer hospital was higher than expected. Prevalence in the community was also increasing, and it was discovered that due to the timing of tests, some hospital-onset cases may have actually been community-acquired. In 2016, our misclassification rate for hospital-onset cases was 21%. Our goal was to promptly identify patients who have CDI in order to quickly initiate treatment and isolation, and thus decrease risk of transmission to other hospitalized patients.

2016 C. diff Cases

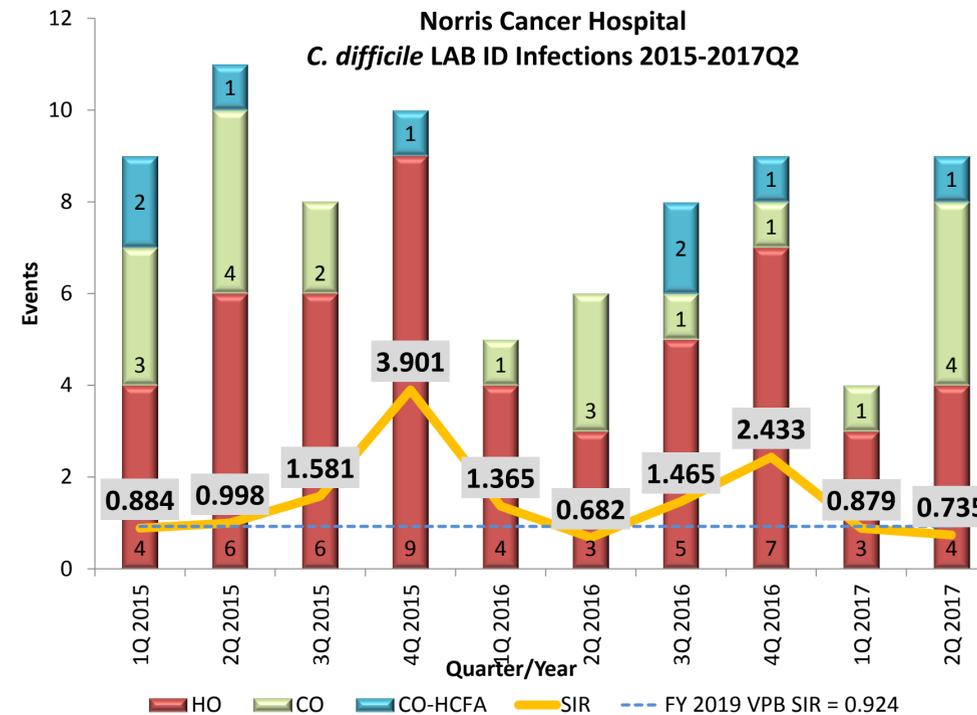| Total # of Early Onset Cases	Total # of Cases	% of Cases Early Onset
4	19	**21.05%**

Methods

A multifaceted approach to reduce incidence of CDI was implemented.

❖ Education on CDI signs/symptoms and appropriate test ordering provided to Nursing, Providers, Patient Care Technicians, and Environmental Services

❖ Formation of a Multidisciplinary *C.difficile* Reduction Taskforce

❖ Addition of the Bristol Stool Scale to electronic medical record for more accurate documentation (non-Type 7 stool rejected by lab)

❖ Implementation of Standardized Nursing Procedure for *C. difficile* Testing to screen high risk patients for CDI on admission

Admission Screening C. difficile Testing Procedure

THIS PROCEDURE DOES NOT SUBSTITUTE FOR CLINICAL ASSESSMENT AND JUDGMENT

Results

Norris Cancer Hospital
C. difficile LAB ID Infections 2015-2017Q2

Data Analysis:

❖ In 2015, our SIR was 1.502 which indicated 50% more infections than predicted (17 predicted with 25 actual)

❖ Our initial interventions in 2016 yielded an 11% reduction in SIR from the 2015 baseline

❖ After implementation of the nurse-driven Standardized Procedure for the Testing of *C. difficile* in 4th quarter of 2016, there was an additional **61% decrease in SIR** during the first two quarters of 2017

❖ Identification of community-onset cases increased following the implementation of the nurse-driven procedure which contributed to a decrease in SIR

❖ **Misclassification rate for study period (January - June 2017) decreased to 0%**

Discussion

❖ Reduction of hospital-onset *C. difficile* cases proved difficult to sustain in our inpatient cancer population.

❖ Our *C. difficile* prevention bundle includes environmental cleaning, antibiotic stewardship, prompts for providers in the electronic medical record, and emphasis on hand hygiene.

❖ We saw an initial decrease in *C. difficile* cases through staff re-education of the signs and symptoms and appropriate ordering of a C. difficile test, but we were not able to sustain it.

❖ By empowering nurses to order a *C. difficile* test within the first three days of admission without a provider cosign, we were able to more promptly identify and treat community-onset cases.

❖ Misclassification rate went from 21% in 2016 to 0% in first two quarters of 2017

❖ One limitation is the short study period (6 months) where sustainability of our efforts have not yet been verified.

Bristol Stool Chart

Type 1		Separate hard lumps, like nuts (hard to pass)
Type 2		Sausage-shaped but lumpy
Type 3		Like a sausage but with cracks on the surface
Type 4		Like a sausage or snake, smooth and soft
Type 5		Soft blobs with clear-cut edges
Type 6		Fluffy pieces with ragged edges, a mushy stool
Type 7		Watery, no solid pieces. Entirely Liquid