

## DESCRIPTION

*Clostridium difficile* is the most common infectious cause of healthcare-associated diarrhea and a significant cause of morbidity and mortality among hospitalized patients. It is a spore forming, toxin producing bacterium that is the causative organism of antibiotic-associated colitis. Development of *C. difficile* infection usually requires disruption of the fecal microbiota and ingestion of spores via the fecal-oral route. *C. difficile* spores can be transmitted between infected or colonized patients via environmental surfaces, equipment and contaminated hands. Preventing patient harm from Hospital Associated *C. difficile* infections takes a team approach involving staff at all levels of the organization.

## AIM

Decrease Hospital Associated Infections of *C. difficile* by at least 5% per year.

## MULTI-DISCIPLINARY TEAM

The team was led by Infection Prevention and includes:

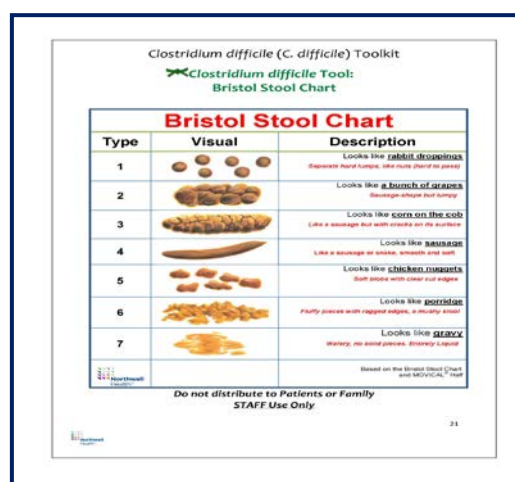
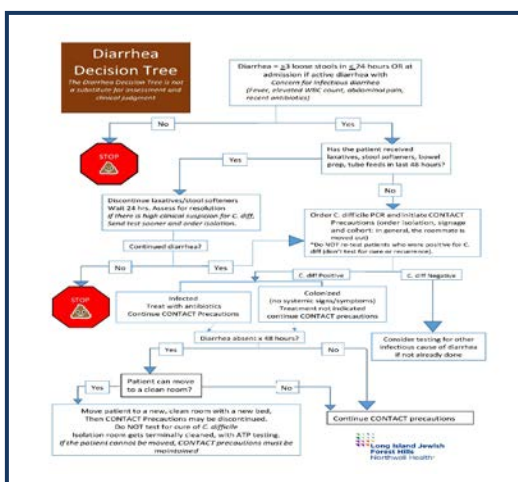
- Chief Nursing Officer
- Dietitians
- Education and Training
- Engineering
- Environmental
- Information technology
- Laboratory
- Transport
- Radiology
- Managers, Nurses, PCAs from the Emergency Department, medical surgical units and Intensive Care Unit
- Pharmacy
- Physicians, Nurse Practitioners, Surgeons, Physician Assistants
- Quality Management

## INTERVENTIONS

A *C. difficile* Task Force was created to foster a multidisciplinary approach.

- Obtain administrative support and buy in
- Obtain physician support and buy in
- Root Cause Analysis (RCA) on all events
- Utilization of TeamSTEPPS® with daily huddles, briefs and debriefs
- Patient, family, visitor and employee “Education Tool Kit” created with checklists and algorithms
- Hand hygiene, personal protective equipment, isolation precautions and medical equipment cleaning campaign
- Real time education and ongoing education campaign
- Appropriate and timely specimen collection
- Lab canceling specimens not meeting criteria
- Environmental cleaning checklist, standardized chemicals and adenosine triphosphate testing
- Pharmacy promoting antimicrobial stewardship
- Infection Prevention calling long-term care facilities for positive community associated cases
- Data and trends are shared with the units during walking RCAs
- Dietary changes to promote a healthy gut flora and ensure patient hand hygiene

## MATERIALS

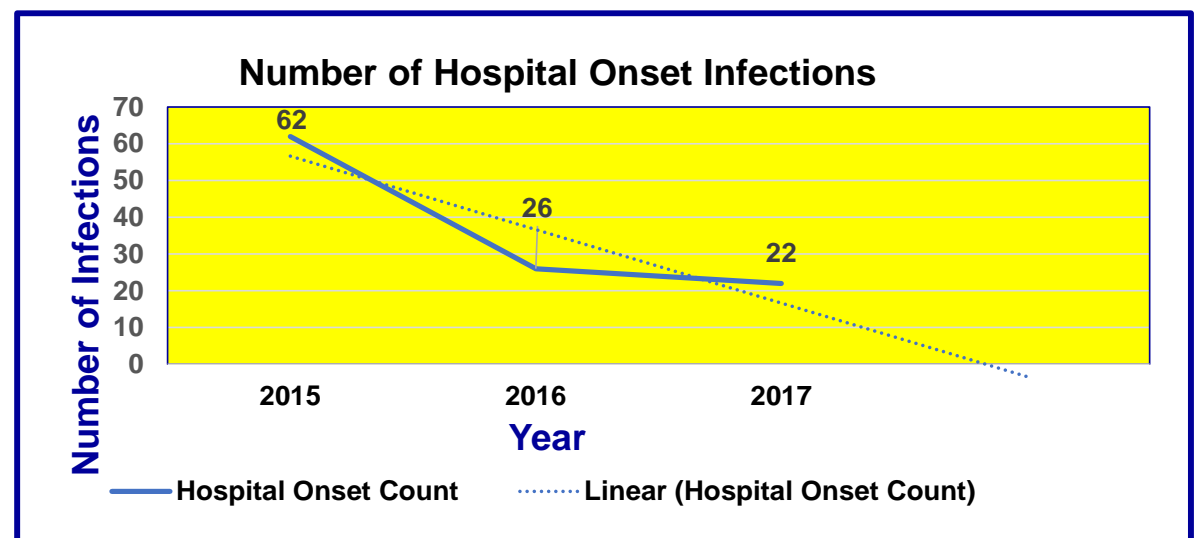


A checklist titled "Clostridium Difficile Checklist" with columns for "Yes", "No", and "N/A". It lists 21 items related to infection control, such as "Hand hygiene compliance", "Isolation precautions", and "Environmental cleaning", used for monitoring adherence to protocols.

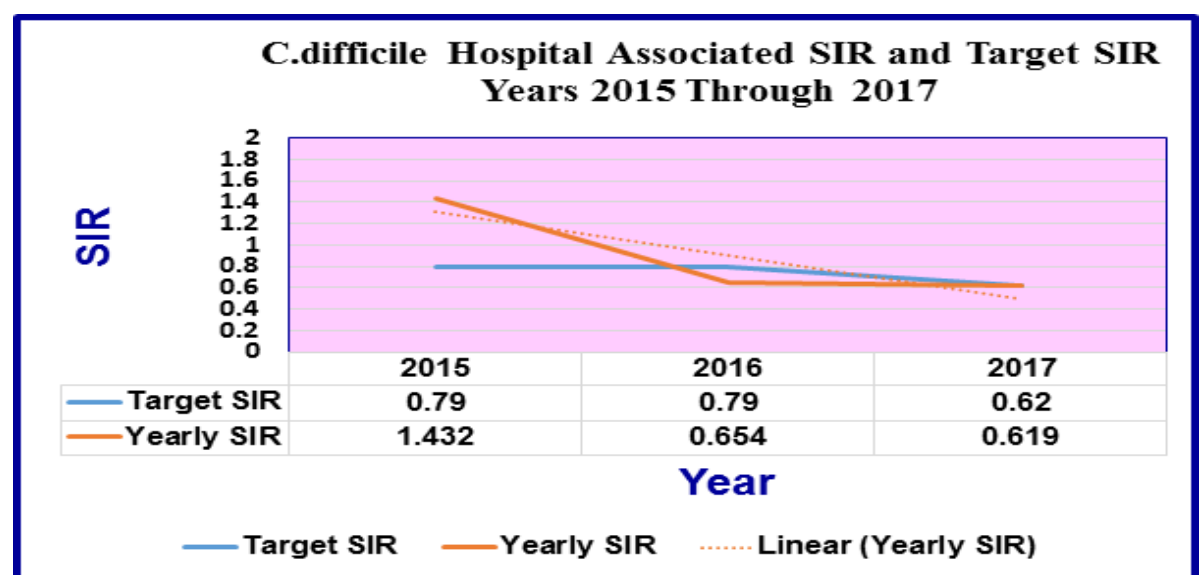


## RESULTS

The number of Hospital Associated Infections decreased by 64.52% from 2015 through 2017.



Utilizing the National Healthcare Safety Network (NHSN) 2015 baseline the SIR decreased each year from 1.432, 0.654 to 0.619 respectively falling below the target SIR.



The annual SIR comparison shows p-values less than 0.05 which indicates a statistically significant difference.

## NHSN Standardized Infection Ratio (SIR) Year To Date Summary Data

Summary Year	Hospital Onset Count	Number Predicted	Patient Days	SIR	SIR P-Value	SIR 95 confidence Interval
2015	62	43.303	73929	1.432	0.0073	1.107, 1.823
2016	26	39.749	69386	0.654	0.0219	0.436, 0.945
2017	22	35.513	65533	0.619	0.016	0.398, 0.923

## CONCLUSION

- A multidisciplinary approach is essential to preventing spread of *C. difficile*.
- Differences in unit structure and resources must be considered with implementing changes hospital wide.
- Teamwork that ensures accountability and escalation of concerns is key to success.
- Ensuring continued education and competency with processes and procedures is needed for sustained results.
- Checklists and algorithms provide staff with the reference tools they need at their fingertips.
- Real time audits and education is imperative to decrease rates.

## REFERENCES

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2. "Clinical Practice Guidelines for *Clostridium difficile* Infection in Adults and Children: 2017 Update by the Infectious Disease Society of America (IDSA) and Society for Healthcare Epidemiology of America (SHEA) . April 2018. *CID* ; 66(7):e1-e48.
3. Dubberke, E, Carling, P, Carrico, R, Donskey, C, Loo, V, McDonald, L, Gerding, D. (2014). Strategies to Prevent *Clostridium difficile* Infections in Acute Care Hospitals: 2014 Update. *Infection Control & Hospital Epidemiology*, 35(S2), S48-S65. doi:10.1017/S0899823X00193857
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