



Reducing Clostridium Difficile Infections

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Background

Healthcare-associated infections (HAIs) are a patient safety concern as well as a financial burden for the hospital. In addition, HAIs are tied to CMS reimbursement with Value Based Purchasing and Hospital Acquired Condition (HAC) Reduction Program. Nationally, *Clostridium difficile* infections (CDIs) are the most frequently reported HAI. In 2011, 453,000 cases and 29,000 deaths occurred. CDI also quadruples the cost of hospitalization.

The Standardized Infection Ratio (SIR) is a statistic used to track healthcare associated infections (HAIs) over time, at a national, state, or facility level. The SIR compares the actual number of HAIs at each hospital, to the predicted number of infections.

Aims/Goals/Objectives

Reducing Hospital-acquired *Clostridium difficile* (C. diff) infection rate (count) and standardized infection ratio (SIR).

Problem

Baseline CDI Standard Infection Ratio (SIR) for SVBGH in 2014 was 1.262 with a count of 64 infections. Initiatives started with a local CDI workgroup in 2015 before the system-led initiative began in 2016. Performance for Jul. – Dec. 2016 and full year 2016 were below threshold at 18 and 49, respectively with a SIR of 0.731 (goal – less than 0.867).

Methods

1. Encourage appropriate use of antimicrobials -

- Continue Antimicrobial Stewardship escalation activities.
- Fluoroquinolone reduction initiative; Reduce fluoroquinolone (FQ) use by a minimum of 10%. FQ are one of the most commonly implicated antibiotic classes associated with CDI.
- MDRO FYI flags added to charts of patients with CDI include a note to use antibiotics with caution.

References

www.cdc.gov/hai/organisms/cdiff/cdiff_infect.html

Acknowledgments:

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2. Use nurse driven protocol to initiate contact enteric precautions and test suspected patients rapidly -

- Place all patients experiencing diarrhea in Contact Enteric Precautions until cause known.
- Assure availability of dedicated disposable equipment for contact isolation patients.
- Use CDI tool kit to educate patient and family on precautions.
- Review contact enteric orders daily to get cultures expedited if needed or discontinue order.

3. Ensure cleaning and disinfection of equipment and the environment -

- Utilize ATP monitoring of terminally cleaned rooms after C diff precautions are discontinued or patient is discharged to improve disinfection of high touch areas.
- Continue to use “Green is Clean” tagging system for clear identification of disinfected versus “dirty” equipment.

4. Reduce inappropriate testing -

- Lab will review specimens daily to eliminate those where stool isn’t appropriate for testing.
- IP reviews negative tests to identify opportunities for reducing testing based on clinical criteria.

5. Conduct CDI surveillance and analyze and report CDI data -

- Send CDI notifications for leaders to conduct investigations on HO CDI cases.

6. Continuing Education for Nursing and Medical Staff -

- Use opportunities found with possible inappropriate testing and near misses to provide one-on-one education to staff.
- Develop case studies to guide physician testing and reinforcement of CDI prevention initiatives.
- Continue use and maintenance of CDI Tip Book for nursing units.
- Develop CDI case reviews for education during staff meetings/ huddles.

7. Measure compliance with hand hygiene and contact enteric precautions -

- Monitor hand hygiene through the Safety coach program with goal of 100% compliance.
- Use PPE audits to monitor correct PPE use for enteric precautions.

Results

As a result of these actions and strong leadership from the SVBGH Pharmacists and Infection Preventionists, performance for the measurement interval of Jul. – Dec. and full year 2017 was 15 and 30, respectively (SIR 0.651). The reduction in count of CDI from 49 (in 2016) to 30 (in 2017), represented an approximate reduction of 39% in CDIs.

Facility	2013	2014	2015	2016	2017
SAMC	9	15	9	9	5
SCH	16	33	37	24	22
SHRH	18	15	8	8	7
SLH	49	30	29	45	34
SMJH	39	13	15	17	20
SNGH	77	86	96	90	74
SNVMC	27	37	28	18	19
SOH	13	20	14	15	9
SPAH	14	24	33	37	26
SRMH	57	60	47	39	13
SVBGH	55	64	42	49	30
SWRMC	17	10	9	6	8
	391	407	367	357	267

FQ - October 2017 YTD		
Facility	Current Month Change v. Baseline	2017 YTD Change v. Baseline
SCH	-41%	-23%
SLH	-60%	-24%
SMJH	-64%	-35%
SNGH	-47%	-27%
SNVMC	-67%	-28%
SOH	-75%	-39%
SPAH	-48%	-18%
SRMH	-37%	-20%
SVBGH	-64%	-31%
SWRMC	-53%	-30%
SYSTEM	-56%	-29%

Conclusion

Improving processes can help facilitate early isolation, diagnosis and treatment, thereby reducing the number of CDI transmitted to other patients and/or staff. Reduction of antibiotics that are prone to inducing CDIs helps to reduce the onset of active infections. Proper cleaning of rooms and equipment after patient discharge prevents the transmission of CDIs from the environment to other patients and staff. The end results are better patient outcomes.

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