Hospital Quality Institute Vanguard Award Application 2017

June 19, 2017

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Title of Application:
Antibiotic Stewardship, patient education, staff instruction and environmental cleaning reduced healthcare facility onset (HO) *Clostridium difficile* in a community hospital

Identify topical area(s) of focus in this application:
- Performance Improvement

Brief statement by an executive leader in support of the application:

Sharp Grossmont Hospital (part of the Sharp healthcare network) is East County San Diego’s largest health care facility. We are dedicated to The Sharp Experience: making health care better for our patients, their families and one another. The Antibiotic Stewardship and *Clostridium difficile* (CDI) pilot study has definitely improved our Sharp Experience.

In November 2015, The Sharp Grossmont Hospital Antibiotic Stewardship and *Clostridium difficile* task force was developed from a multifaceted team of dedicated Sharp staff and physicians. They based their pilot study on the need for an interdisciplinary team approach to tackle the issue of Hospital Onset CDI. The result of the pilot study has been nothing short of successful and has earned the wholehearted support of the hospital executives, Medical Staff, and all staff. The results of this project was presented at the Annual meeting for the Association of Professionals in Infection Control (APIC). We are proud of our team’s accomplishments and ongoing efforts to improve quality of care.

*Louise White, BSN, MHA*

*Chief Nursing officer and Vice president Patient Care Services*
CDI is the most common hospital acquired infection in the United States, causing half a million illnesses in a year. Thirty thousand people die within one month of their initial diagnosis of CDI. Elderly individuals have been disproportionately affected by the medical care and antibiotics they receive, making them the population at highest risk for developing CDI.

Sharp Grossmont Hospitals’ Antibiotic Stewardship and CDI task force was conceived and implemented to proactively prevent, identify those at high risk and decrease the number of Hospital Onset CDI’s following our goal of becoming a high reliability organization. The task force focused on specific patient education tailored to our patient population, staff engagement and accountability, formalized screening tools utilizing interrater reliability, EMR screening forms to improve interdisciplinary communication, lab and nursing workflow changes, improved signage and strict environmental cleaning to reduce HealthCare facility onset (HO) CDI in a high volume community hospital that is surrounded by a plethora of nursing homes. The taskforce understood that an interdisciplinary approach was imperative in alignment with Sharp’s strategic vision to become a High Reliability Organization (HRO).

In a twelve month period, Sharp Grossmont Hospital has achieved reduction of HO CDI which can potentially impact the reoccurrence of disease, treatment, readmission and cost and ultimately a safer environment for our patients.
Background and relevance of the problem being addressed and effort undertaken.

CDI is a global health issue and is the most common hospital acquired infection in the United States. Sharp Grossmont Hospital CDI Standard Infection Rate (SIR) was higher than the national average at 1.7. A multi-faceted approach that included infection prevention, environmental cleaning, and reduction in over testing of CDI, and overprescribing antimicrobials was undertaken to reduce HO CDI.

Description of the effort, including the scope, processes, strategies and tactics utilized, challenges encountered and how they were addressed.

All patients in an acute care hospital with lab identified positive *Clostridium difficile* stool samples from December 1, 2015- November 30, 2016, were analyzed. The goal was to identify all opportunities for improvement and any trends that could be targeted. A multifaceted approach was utilized; including a comprehensive antimicrobial stewardship program (ASP), early detection in the first three days of admission, highly specific patient education to include patient hand hygiene at key moments, improved visibility of signage, dietary probiotic administration, enhanced and standardized environmental cleaning with bleach, daily patient bathing, a standardized procedure for testing stool specimens, and rapid containment of the organism using contact isolation and strict hand hygiene with soap and water.

**Strategy/Action Plan included:**

- C-Diff testing algorithm with 2 RN Verification
- “Five by Five” initiative- RN cleansing of 5 highly contacted areas in room with bleach wipes at 5 am and 5 pm
- Strict patient hand hygiene and daily bathing
- Infection prevention bundle (signage, caddies with supplies, etc.)
- EVS training on cleaning procedures and compliance
- Antibiotic surveillance program
- Probiotic therapy instituted in the ICU
- Development of Clinical excellence tool for nursing knowledge transfer and standardized care
- C-Diff Culture orders submitted after day 3 will have automatic cancellation to decrease inappropriate testing
- Antibiotic Stewardship Program
Description of the results of the effort.

Sharp Grossmont HO CDI cases declined significantly over a twelve month reporting period, from 16 cases in December 2015 down to 1 case in December 2016 (see graph 1). This was also noted by the improved standard infection ratios (SIR) from 1.7 (see table 1, graph 2) to less than 1 (see table 2, graph 3) monitored from 2016 to current. Following the performance improvement implementation period, the rates of HO CDI cases at Sharp Grossmont Hospital have been sustained despite the steady occurrence of CO CDI cases. To date Sharp Grossmont HO CDI cases remain consistently low.

Discussion of the significance of the results.

The rate of HO CDI decreased by 40% in calendar year 2016. Although we have not measured other quality indicators such as patient satisfaction, related to these results we believe that the outcomes of this performance improvement project will positively affect our patient population. A positive impact in antibiotic utilization days was observed at our entity. There was a reduction in the use of fluoroquinolones by 25% over the twelve months compared to the previous year. Similarly, rates of Cefepime and Piperacillin use were down by 5% in the same time frame.

How do the results demonstrate outstanding achievement?

The cost of each HO CDI case is estimated at an additional $9000 per case to the hospital. Preventing these cases has resulted in an estimated savings of $135,000 for calendar year 2016 for Sharp Grossmont Hospital (see graph 1). The positive outcomes from implementing and operationalizing these improvement strategies for CDI reduction can significantly decrease morbidity, reoccurrence, treatment, readmission and cost of healthcare. Most importantly, the prevention of HO CDI has a considerable impact on our patients’ quality of life as well as their confidence in the care we provide.

Description of sustainability and scaling of the achievements.

Despite the steady prevalence of CO CDI, lab-identified HO CDI rates have been significantly reduced by this multi-faceted approach. Prompt and accurate assessments, isolation of patients at high risk, consistent interdisciplinary communication skills, dietary interventions and clinical nutrition appraisal, enhanced environmental services cleaning protocols, strategical pharmaceutical involvement, all contributed to the end result of effective change and sustained results. As part of a high reliability organization, hospital leadership remains engaged in the process and staff continue to hold each other accountable to these achievements.

Description of key lessons learned and any advice to colleagues who might try to undertake a similar effort.
A multi-faceted approach to undertake the reduction of Healthcare facility onset (HO) and Community onset healthcare facility associated (CO-HCFA) CDI, can be effective.

The Sharp Grossmont Hospital Antibiotic Stewardship and CDI taskforce was comprised of members from the following disciplines:
- Infection Control Physicians and Nurses
- Nursing Leadership
- Nursing Educators
- Pharmacists
- Laboratory
- Food and Nutritional Services
- Environmental services
- Physical Therapists
- Clinical Informaticists
- Quality Assurance
- Supply Chain Services

The Sharp Grossmont Hospital Antibiotic Stewardship and CDI taskforce was comprised of members from the following disciplines:
- Infection Control Physicians and Nurses
- Nursing Leadership from throughout the hospital
- Nursing Education
- Pharmacy
- Laboratory
- Dietary
- Environmental services

A multifaceted approach was utilized including:
- A comprehensive antimicrobial stewardship program (ASP)
- Probiotic administration
- Enhanced environmental cleaning with bleach
- Daily patient bathing
- Standardized procedures for testing stool specimens and early detection
- Rapid containment of the organism using contact isolation
- Strict hand hygiene for patients and staff with soap and water
- Enhanced education to all healthcare workers
Communication

- Regularly occurring meetings with a multidisciplinary team
- Continual communication to nursing staff
- Ongoing monitoring of all cases and additional just in time feedback provided to nursing staff involved in the care of those patients.
- Continual follow up and feedback between all team members.
- Sharp Healthcare’s leadership has included this metric in their performance targets for ongoing monitoring and accountability.
- Sharp Grossmont Board remains updated on an ongoing basis through the Quality and Safety Committee review of the executive dashboard.

Supplementary Material

Graph 1

![Graph 1](image)

Table 1

<table>
<thead>
<tr>
<th>Healthcare Associated Infections: Detailed Measures</th>
<th>12-month SIDR (monthly infection count)</th>
<th>Current Fiscal Year</th>
<th>Benchmark</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>FY 2016 (YTD)</td>
<td>Expected</td>
</tr>
<tr>
<td>CDIFF: Housewide</td>
<td>1.8 (14) 1.8 (9) 1.7 (4) 1.7 (4) 1.7 (10)</td>
<td>1.7 (17)</td>
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Combating C. Diff
The 4-Step Approach

Confirm by Testing
- Standardized Procedure for testing
- C. Diff Testing Guide (2-RN Verification)

Clean Patient
"Golden Moments" Strict patient hand hygiene with soap and water:
- Before oral meds
- Before eating
- After using the bathroom
- Before brushing teeth
- Before oral care

Daily Pt. Bathing

Clean Environment
"Five By Five" Clean with Bleach Wipes by 5 am and 5 pm these areas:
- Computer
- Bedside Cart
- Bedside Table
- Bed Rails
- Call Bell

Contain the Organism
- Strict Hand Hygiene with soap and water
- Proper Contact Isolation Precaution

Community Education

Episodes of Care