

Project Submission:
2009 Delaware Valley Patient Safety Award

BRYN MAWR REHABILITATION HOSPITAL

*“New Infection Control Procedures Implemented
to Reduce Healthcare-Associated Infections”*

New Infection Control Procedures Implemented To Reduce Healthcare Associated Infections

Abstract

Healthcare associated infections have been on the rise in hospitals throughout Pennsylvania. Our facility faced the same dilemma. With a unique population, we saw an increase in the incidence of Clostridium Difficile infections (C-Diff). In addition, because of our patient population and the services we provide, we faced unique challenges as we worked to reduce the incidence of infection and protect our staff and patients.

Our patient population is at increased risk for C-Diff because of their medical history and the length of hospital stay. Many of our patients are on antibiotics long-term and therefore are more susceptible to C-Diff. In 2007, we saw a significant rise in the incidence of healthcare associated infections; the incidence of C-Diff more than doubled in that one year period. This increase prompted our hospital's Infection Control Committee to initiate a C-Diff Task Force to study the prevalence of C-Diff and to reduce the number of C-Diff infections.

Goals

The goal of the task force was to identify measures and innovative techniques to help reduce the spread of infection. The first step was the creation of a "secret shopper" program to "watch" employees' hand hygiene procedures. Because C-Diff is highly contagious, it is extremely important that all employees engage in proper hand hygiene in order to avert the spread of C-Diff.

Once the hand hygiene program was initiated, the task force instituted a hospital-wide education program designed to enhance infection control precautions. The education program focused on employees, patients and patients' families. The infection control measures also included using dedicated and disposable equipment on infected patients.

The task force identified the housekeeping staff as a key audience because of the resistant nature of C-Diff. An educational program was established specifically for the housekeeping staff that focused on disinfection procedures for equipment and patient rooms.

As a result of the infection control initiatives developed and implemented, we saw the incidence of hospital-acquired infections drop dramatically. The incidence of C-Diff in particular has been reduced by 60%.

Baseline Data

From 2006 to 2007 the incidence of C-Diff infections doubled at our hospital. Immediate action was needed to address the infection rate. The first step was to establish a C-Diff Task Force responsible for identifying why the prevalence of C-Diff rose so significantly and so quickly. The group also was responsible for developing procedures to help reduce the incidence of C-Diff in the hospital.

(Baseline Data – continued)

Initial work focused on identifying where the greatest number of cases was concentrated within the hospital. Unfortunately, C-Diff was not concentrated in one unit; instead the incidence was spread equally throughout the facility, more than likely because of the make up of our hospital and how patients move through departments throughout the day. The task force study identified rooming procedures and the type of precautions taken for infected patients, as well as policies and procedures for cleaning re-usable equipment, particularly after use by a C-Diff patient. Finally, hand hygiene procedures were carefully studied. (Surveillance Summary Data Attached)

The C-Diff Task Force researched best practices and updated policies and procedures supported by evidence-based research. As each policy was reviewed, revised and approved, updates were provided to all employees. (Infection Control Policy and Procedure Manual – Protocol for Handling Clostridium Difficile Patients Attached)

Interventions

The C- Diff Task Force established a variety of strategies to reduce the prevalence of C-Diff. Over the course of one year, these strategies successfully resulted in a significant decrease in the number of C-Diff cases in our hospital.

One of the initial improvement activities was a unit-based “secret shopper program” and formal audit to observe staff compliance with hand hygiene. The “secret shopper program” raised awareness of the importance of hand hygiene through recognition by senior leadership. A touch-activated singing placard was installed above all hand washing sinks to increase compliance with a 15-second hand scrub. As a follow up, the task force implemented a hand hygiene audit that includes a monthly storyboard that shows hand hygiene compliance. In addition, a patient hand hygiene education guide was developed and implemented and staff began assisting isolation patients with hand hygiene whenever patients leave their room and prior to meals. Hand wipes are placed throughout the organization and on patient meal trays to assist with patient hand hygiene. In addition, the hospital purchased a Glow Germ Teaching Set used for new employee orientation to stress the importance of infection control.

The task force also recommended developing a mandatory C-Diff Self-Learning Module for all professional and non-professional staff. The self-learning module includes a post-test and was instituted as part of the mandatory continuing education program.

The task force also recommended dedicated and disposable equipment for C-diff patients, including a bright yellow disposable blood pressure cuff and stethoscope, and other disposable equipment. Providing patient-dedicated products reduces the opportunity for C-diff transmission.

Two of the most significant initiatives were the development of a patient room assignment procedure and equipment cleaning protocol. For patient room assignments, we heightened the importance of identifying and monitoring C-Diff infections in patients and implemented procedures that ensure infected patients do not share a room with patients not infected with C-Diff.

A multi-disciplinary committee that included representatives from nursing, infection control, central supply, housekeeping and therapy met to establish new guidelines for the frequency and method of cleaning all equipment. An easy to read grid was developed and the staff received clear, succinct guidelines for disinfecting equipment. By including all appropriate areas, we ensured that our staff had a vested interest in the new cleaning process.

A Daily Isolation List, easily accessible throughout the hospital via a shared network drive, was also introduced. This allows easy access of isolation information and facilitates room assignments.

Finally, the task force developed educational fact sheets for patients and families. The fact sheets include information on isolation, transmission and prevention of C-Diff. Fact sheets are given to family members and also placed at the patient's bedside. In addition, we encourage patients to take this information home at discharge so that they can be aware of the infection control practices that can curb the spread of C-Diff.

Results

In 2006, our C-Diff infection rate was 0.57. That number increased almost two-fold to 1.24 in 2007. When our Infection Control Committee saw this increase, a C-Diff Task Force was formed to identify trends and investigate strategies to reduce the incidence of infection. As a result of the many initiatives developed and implemented, the prevalence of C-Diff decreased to 0.56 within 1 year— even lower than the 2006 rate. (See Surveillance Summary)

Easy to Implement

These initiatives can easily be developed at other healthcare facilities. A multi-disciplinary task force is important to the success of the initiative. We got buy-in to strengthen our isolation policy and develop a comprehensive cleaning grid. Simple steps, such as the use of bleach disinfectants, make a huge impact. Educating staff on hand hygiene and understanding that certain cleaners and disinfectants are more effective at combating infection made a significant difference in our efforts to reduce the prevalence of C-Diff.

APPENDIX

SURVEILLANCE SUMMARY

	2006	2007	2008
C DIFF	0.57	1.24	0.56
HH COMP	54	72.6	83.2

Acquisition or Infection Rate = #hospital-acquired inf/pt or days
HH COMP= #compliant/total observed

Infection Control measures:

1. Isolation Carts now contain patient teaching sheets on MRSA, VRE, etc
2. Nursing posts the daily Isolation List
3. Housewide implementation of C diff Self-learning Packet
4. New policies/procedures/products:
 - a. Equip Cleaning Grid clarifies cleaning responsibilities
 - b. Patient teaching HH guideline, wipes in iso cart, therapy areas, dining rm
 - c. Disposable BP cuffs and yellow stethoscopes for iso patients
 - d. Large trash receptacles available to support iso practices
5. Changes to cleaning products- Clorox wipes, stronger Sanicloths
6. EVS reviews iso list, disinfects accordingly w/new disinfectants
7. Education reinforces IC practice via newsletters, storyboards, inservices
8. Enhanced Patient Room Assignment Guidelines
9. Strengthened Contact Precautions to include mandatory gowning
10. Hand Hygiene Compliance monitored monthly on inpatient units/gyms

**INFECTION CONTROL
POLICY AND PROCEDURE MANUAL**

PROTOCOL FOR HANDLING CLOSTRIDIUM DIFFICILE PATIENTS

1. Place each patient with C Difficile infection* on Contact Precautions in a Private Room.
2. To reduce the risk of transmission, the *roommate* of a patient with C Difficile infection should be moved to another room.
3. Patients with resolved** C Difficile infection should be cohorted together in the same room. See “Patient Room Assignment Guidelines” for additional details on room assignments.
4. A patient with profuse C. Difficile diarrhea that is not contained will have bedside therapy.
5. Hand washing with SOAP AND WATER for 15 seconds must be adhered to when caring for patients with C. Difficile, because alcohol-based hand sanitizers (Avaguard) are not effective in eradicating C. Difficile spores. Soap, friction for 15 seconds, and rinsing of hands with water are necessary. A paper towel is used to turn off sink to avoid recontamination of hands.
6. Dedicated or disposable equipment will be used whenever possible. Unnecessary supplies or equipment will not be taken into the room. Patient charts are not to be brought into the room. All re-usable equipment removed from room must be disinfected with Clorox wipes. Gloves will be worn during equipment disinfection, followed by glove removal and hand washing (as described in 5.).
7. Housekeeping will clean C. Difficile patient room and bathroom daily with the approved, pre-mixed disinfectant bleach solution. Upon discharge, room transfer, or discontinuation of Contact Precautions, in addition to the bleach disinfection, housekeeping will provide a terminal cleaning to the room prior to assignment of a new patient to the room. See housekeeping policy for elements of a terminal cleaning.

* Infection: any of the following (1) currently receiving therapy for C Difficile, (2) currently symptomatic

**Resolved Infection: all of the following (1) not currently receiving therapy for C. Difficile, (2) currently asymptomatic

Reviewed and Approved:

March 2005, July 2006, Revised Jan 2007, Jul 2007, Jan 2008

***INFECTION CONTROL
PATIENT ROOM ASSIGNMENT GUIDELINES***

Appropriate portions only included

C. DIFF

- Place patient with C diff infection* in a private room (if infected patient has roommate, move roommate to a new room rather than infected patient)
 - Post Contact Precautions Sign
 - Follow C diff Protocol
- Cohort patients with same organism only *after* infection* resolves

*Infection: one or more of the following- currently on therapy, currently symptomatic

If Cohorting is not an option, place a patient with resolved C diff infection with another patient without the following risk factors:

- Age 65 or >
- Invasive devices such as: GI/NG/Peg/Feed tube, Trach, Central Line, Foley, etc
- Quinolone, cephalosporin or clindamycin exposure within 1 week
 - Immunosuppression

If any of above should occur in the patient without H/O C diff, move that patient to another room immediately