

## Strategies for Significant Reduction of Healthcare-Associated Clostridium difficile Infection: An Interprofessional Approach

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### Objectives

- Identify significance of problem with healthcare associated infections.
- Discuss proven strategies to decrease c diff infections.
- Describe measurable outcomes and implications for nursing practice using an interprofessional approach to reduce healthcare associated infections.

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- 531 bed academic teaching institution
- Opening 127 bed tower in Fall 2016
- Level I Trauma Center
- Primary Stroke Center
- Magnet® Designated September 2005
- Magnet® Re-designated December 2009 and February 2015




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Located in north central West Virginia, WVUH draws patients from all 55 counties in WV, all 50 states and the District of Columbia, and currently serves an international patient population from 11 countries.



**WVUHealthcare**

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WVUH, which employs nearly 1800 nurses, initially designated in 2005, remains the **first and ONLY** **ANCC Magnet® designated hospital** in the state of West Virginia.




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### Significance of Problem

- Individuals receiving medical care are at risk for acquiring healthcare associated infections.
- *C.difficile* remains at historically high levels.
- There are many opportunities for transmission of *C.difficile* in adult care, teaching facilities.

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### Significance of Problem

- Healthcare associated infections, such as *C.difficile*, can significantly impact patient care outcomes.
- *C. difficile* diarrhea is linked to 14,000 American deaths each year (CDC, 2013).
- Decreasing the opportunity for facility transmission is critical for quality improvement.

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### Significance of Problem

- It is estimated to cost more than \$3 billion per year in the United States
- Prevention of *C.difficile* infection can be challenging in the health care setting as *C.difficile* forms spores that are resistant to many disinfectants and can persist on environmental surfaces for months
- Recent studies have also demonstrated spread of *C.difficile* from asymptomatic individuals, making infection prevention even more difficult.

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### Significance of Problem

- Although already utilizing best practices, the organization continued to see infection (actual and expected) much higher than national averages.
- Strategic nursing leadership was critical to address this concern.
- A focused, interprofessional approach was needed to decrease rates.

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### Best Practice

- Guidelines for control of *C. difficile* infection include:
  - using gowns and gloves,
  - hand washing with soap and water,
  - implementation of an antimicrobial stewardship program,
  - enhanced disinfection of rooms housing patients with *C. difficile* infection,
  - and the use of a hypochlorite solution for disinfection

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### Best Practice

- Hydrogen peroxide vapor has been demonstrated to reduce *C. difficile* spores from environmental surfaces by a log reduction of >6

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### Strategies

- A interprofessional task force as part of the organization's Performance Improvement Plan was formed in January 2013
- The task force consisted of health care professionals (HCP) from Infection Control, Hospital and Nursing Administration, Information Technology, Quality Outcomes, Center for Education and Organizational Development, Pharmacy, Microbiology, Laboratory, and Environmental Services

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### Strategies

- The testing algorithm for *C.difficile* infection was standardized and included a two step process using ELISA for GDH antigen and *C.difficile* toxin initially.
- Samples with results were checked by PCR

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### Strategies

- The education group worked actively in providing information regarding *C.difficile* infection and prevention to health care professionals.
- A computer based learning module was created and was required to be reviewed by HCP, who also had to complete an assessment

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### Strategies

- Observations for opportunities for adherence to hand hygiene were done by Infection Preventionists
- Environmental personnel were educated regarding proper cleaning of rooms.

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### Strategies

- Monitoring of high touch surface cleanliness during terminal cleaning was instituted by detection of ATP by use of Clean-Trace Hygiene Management System.®
- ATP readings were expressed as relative light units (RLUs). Surfaces with readings of less than 500 RLUs were considered clean. Surfaces with RLUs between 500-1000 RLUs required more attention, and greater than 1000 RLUs

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### Strategies

- Hospital and nursing administration assisted with obtaining a contract for the use of hydrogen peroxide vapor in July 2013. Services hours were expanded in April 2014.
- Antimicrobial Stewardship Committee made a new goal of further reduction of fluoroquinolone use in addition to existing goals.

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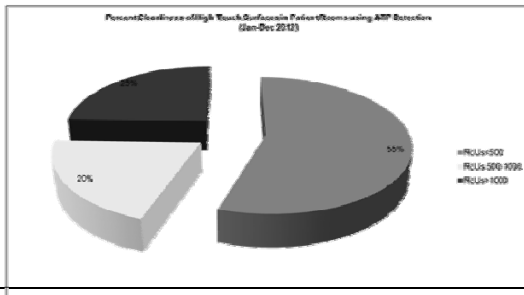
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### Outcomes Room Cleanliness Improvement




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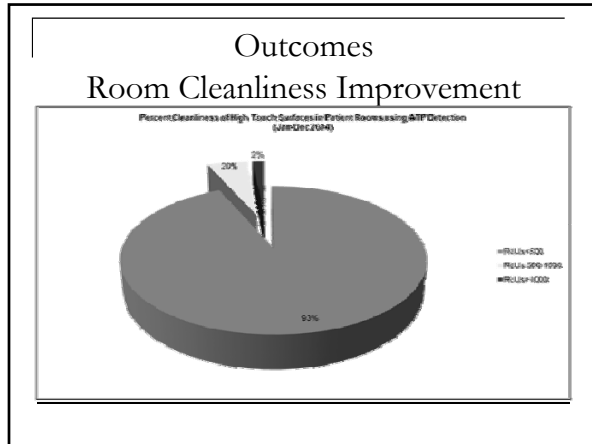
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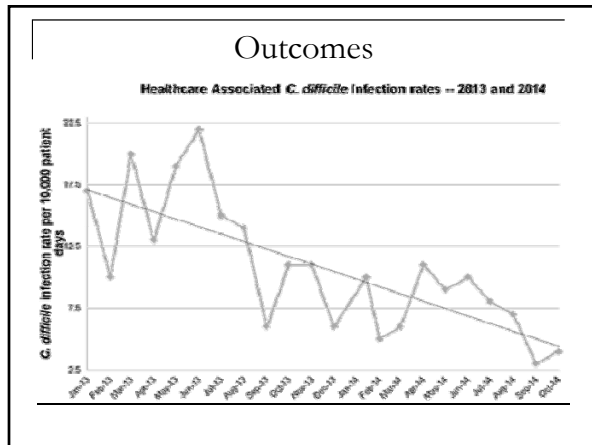
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### Conclusions

- Interventions by members of the interprofessional task force were successful in reducing rates of health care associated *C. difficile* infection at our hospital.
- Sharing of data on an ongoing basis and engaging all the members of the team and frontline staff was critical.
- Similar strategies may be replicated at other organizations to yield similar results.

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Thank you for your attention



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