



Burden of *Clostridium difficile* infection on hospital readmissions and its potential impact under the Hospital Readmission Reduction Program (Chopra, T. et al. AJIC, 43, 2015)

Abstract

Although improved infection control efforts have been successful in decreasing the rates of many hospital-associated infections, *Clostridium difficile* infections (CDIs) still remain a problem. Accelerated Hydrogen Peroxide® (AHP®) is a patented disinfectant technology that is known for its effective cleaning properties as well as fast acting bactericidal and virucidal efficacy. AHP® surface disinfectants have been proven to reduce bacterial spore load on hard-non-porous surfacesⁱ.

Background

CDI still remains a problem in healthcare facilities with rates of CDI estimated at 11.5 per 1000 discharges in 2010. Studies have shown that recurrent CDIs often require readmission and can result in a severe infection, high mortality and high attributable costs. This is compounded by the additional interest and concern in reducing 30-day readmission rates.

Study

The objective of this study was to characterize the burden of CDI on 30-day hospital readmissions in a multi-hospital health system. Data was collected from patients that were discharged from the health system in the year of 2012. Any patient with a primary diagnosis of CDI, where CDI was the principal reason for hospitalization were included. The study compared discharges and readmissions with a prior CDI with discharges and readmissions without a prior CDI. It also compared the length of stay and time to readmission.

Results

There were a total of 51,353 all cause discharges during the study period. 1% of patients had a CDI diagnosis at some point during their stay. The CDI discharges were more likely to be ≥ 60 years of age and were more likely to be discharged to another healthcare facility, such as long term care center or nursing home.

During the study period, 14.4% of all-cause discharges were readmitted to the health system within 30 days of leaving the hospital. CDI discharges returned to the hospital nearly twice as frequently during the time of the study. Among the CDI discharges, about 26% were readmitted with a primary CDI diagnosis, while the balance of patients were readmitted for another reason. The average length of stay was 10 days for a community onset readmission and 12 days for a hospital onset readmission. The cost of a CDI discharge and readmission were similar. The cost per case of CDI discharge was

\$9,116 vs. the cost per case of CDI readmission was only slightly higher at \$9,553.

Conclusions

Reductions in hospital onset CDI and readmission of patients with an index CDI can provide tremendous cost savings to hospitals. This calls for better infection control and antibiotic stewardship measures toward CDI management in the hospital and as patients transition to the next level of care.

Implications for AHP®

AHP® is both a powerful cleaner and disinfectant with proven germicidal effectiveness against pathogens of concern.

AHP® Disinfectants are One-Step Disinfectant Cleaners

- AHP® has proven cleaning efficiency resulting in lower costs and faster results which leads to added confidence that disinfection can occur
- AHP® has also been proven to kill *C. diff* spores by > 2 Log after 1 minute exposureⁱⁱ

AHP® Disinfectants provide the perfect balance between safety and efficacy

- AHP® is designed to be easier on employees and occupants resulting in protocol compliance
- The ingredients found in AHP® are all listed on the EPA and Health Canada Inerts lists and the FDA Generally Regarded as Safe List

AHP® Disinfectants are environmentally sustainable

- AHP's® active ingredient, hydrogen peroxide, breaks down into water and oxygen leaving no active residues
- AHP® does not contain Volatile Organic Compounds (VOCs) or other chemicals that will negatively impact indoor air quality

AHP® Disinfectants have realistic contact times

- Short contact times ensure surfaces remain wet for the required contact time, providing comfort and confidence that disinfection has occurred

AHP® Disinfectants are compatible

- AHP® formulations are tested to ensure compatibility that preserves your investments in equipment, furniture, and building surfaces



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ⁱ Efficacy of Different Cleaning and Disinfection Methods against *Clostridium difficile* Spores: Importance of Physical Removal versus Sporicidal Inactivation. ICHE 2012;33:1255-1258

ⁱⁱ The Oxivir TB Formulation of Accelerated Hydrogen Peroxide (AHP) is Effective for Killing *Clostridium Difficile* Spores on Toilet Seat Surfaces. CJC Vol 22, No. 1, Spring 2007, pg 49