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ELIMINATING CLOSTRIDIUM DIFFICILE FROM THE HEALTHCARE ENVIRONMENT

Eliminating Clostridium difficile from the Healthcare Environment
By DR. MICHELLE J. ALFA

The bug may be “trés difficile” but this project is aimed at efficiently eliminating (itals)Clostridium difficile(enditals) spores from the healthcare environment thereby reducing the risk of nosocomial transmission of Clostridium difficile associated diarrhea (CDAD).

Toxigenic Clostridium difficile is a leading cause of nosocomial infections within Canadian Healthcare facilities – 35 to 95 cases per 100,000 patient days are reported. CDAD is a gastrointestinal infection that impact more people than all of the other “classic” enteric pathogens combined (e.g. (itals) Campylobacter species, Salmonella species, Escherichia coli O157:H7(enditlas) and (itals)Shigella species(enditlas)). Although CDAD has been resident in healthcare facilities for many years, recent data indicates that the incidence in some geographic locations has dramatically increased, and the number of fulminant cases and CDAD attributable mortality has also increased.

The ability of C. difficile spores to survive in the environment has been well documented, particularly in toilet facilities of patients with CDAD. This “toilet reservoir” has been suspected by many to contribute to CDAD infection transmission within healthcare facilities. Many of the currently used cleaning agents for commodes, toilets and environmental surfaces may be good for cleaning, but they are known to be non-sporicidal, therefore, this reservoir may persist despite what might be considered appropriate cleaning of the environment. There is little published data on effective surface cleaning methods that combine efficient physical removal of bioburden along with efficient disinfection thereby providing better killing of any residual spores that remain despite the cleaning process. There have been studies using bleach but these were not well controlled and the findings were not conclusive. Furthermore, bleach at 5000 ppm is corrosive and fumes lead to workplace safety concerns for cleaning staff.

The primary aim of this project is to determine if daily commode treatment with specific formulations of Accelerated Hydrogen Peroxide (AHP) agent at concentrations of 0.5- to two-per cent can reduce the level of C.difficile spores in the toilet environment of patients who have CDAD compared to the routine cleaning method using agents that are known to be non-sporicidal. The study will be multi-phase and include the following:

- (1) Laboratory testing to determine the efficacy of microfibre cleaning cloths in conjunction with specific AHP formulations that are known to provide optimal killing of C. difficile spores in a manner that doesn't result in workplace safety concerns.
- (2) Prospective clinical intervention studies to determine the efficacy of the optimised cleaning/disinfection methods in the toilet facilities of patients with CDAD.

Although the clinical intervention studies will take time to ensure statistically relevant data, rapid publication of the in-vitro work should help provide insight for users as to which approaches may be most effective. This exciting study will be jointly funded by Virox and JohnsonDiversey and will provide healthcare facilities with much-needed information regarding taking the “difficile” out of Clostridium difficile the nosocomial pathogen of the new millennium.

A reference list for this article and a copy of the study when completed can be obtained from Nicole Kenny at nkenny@virox.com.



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