



## Effects of an Environmental Services Professional Training Course and Cleaning Products on the Rates of Infection Seen at Suburban Hospital (CJIC Vol 22, No.1 Spring 2007, pg 50)

### Abstract

In 2000, National Institutes of Health (NIH) and U.S. Food & Drug Administration (FDA) personnel conducted a survey at a number of the District of Columbia (DC) hospitals. The investigators found that hospital housekeeping practices varied widely between institutions and there was no standardized training program for environmental services (ES) personnel. For example, cleaning practices did not allow for the appropriate contact time when disinfectants were applied to surfaces. This study evolved from the results of that survey and utilized a relatively new yet proven technology called Accelerated Hydrogen Peroxide®(AHP®).

### Background

The purpose of this study was to evaluate the effectiveness of a formal, eight-hour training course for hospital environmental services personnel on the overall rate of infections seen in a mid-sized suburban hospital. The study also incorporated the use of an EPA Registered Accelerated Hydrogen Peroxide disinfectant-cleaner commercially available from Sealed Air Diversey under the names Oxivir TB (sold in Canada & US) and Accel Intervention (sold in Canada).

The study was designed so that one hospital serves as its own control, by measuring the data points both before and after implementation of the training. Data was collected retrospectively for the twelve-month period prior to implementation of the training course. The primary efficacy endpoint is the percentage change in overall infection rate in the hospital, as measured by antimicrobial use for twelve months before implementation of a formal eight-hour training course for environmental services personnel and antibiotic use for twelve months after implementation of the course.

### Description of the Training Course

The Environmental Services Professional (ESP) training course provides a solid overview of the environmental and occupational health concerns of housekeeping staff working within health care institutions. The course of study provides the ESP with all the information they need to perform their jobs safely and effectively. Participants will become familiar with the requirements of the Occupational Safety and Health Administration (OSHA) Bloodborne Pathogens and Hazard Communication Standards, as well as the Department of Transportation shipping regulations for infectious waste. Successful completion of the post-test will certify knowledge in the following areas:

- Occupational hazards associated with handling infectious waste, disinfecting contaminated surfaces, and responding to infectious materials incidents
- Infection control on the job and in the hospital environment with special emphases on the importance of an employee hand-washing program (e.g. laminated hand hygiene signs will be affixed to all employee restroom doors)
- Material Safety Data Sheets (MSDS) and hazards associated with the use of chemical disinfectants with an overview of the importance of choosing the safest products available from both an occupational health and environmental management perspective
- Selection of proper personal protective equipment
- Housekeeping and spill response procedures with special emphases on proper disinfection for high touch surface areas and employee restrooms
- Requirements for packaging and transporting infectious or regulated medical waste.

### Results of the Study:

Following the 8-hour training course, Environmental Services Staff continued using their current daily disinfectant (a Quaternary Ammonium Compound based product). The collected data showed an average decrease of antibiotic usage by 6.0%. After the implementation of the 0.5% AHP product, there was an average decrease of 18.4% giving an overall average decrease in antimicrobial usage of 10.1% during the 12-month study after implementation of the training program and introduction of AHP.

Training of Environmental Service personnel increased confidence levels, and along with the new disinfectant product, enhanced over-all performance in cleaning and the proper use of disinfection products.

### Conclusion

This study clearly highlights that infection prevention requires a multi-faceted approach. The facility as a whole and all parties involved in patient care must be included in the management of hospital acquired infections. AHP has gained a reputation for being the most effective and safest disinfection product on the market. The use of AHP at Suburban Hospital in combination with a comprehensive Environmental Services training program significantly reduced the rates of Hospital Associated Infections (HAIs).

The evidence from this study suggests that the use of a structured, comprehensive occupational safety and health and environmental management training program for Environmental Service personnel with the addition of a cleaning product that requires less contact time



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can have a statistically significant impact on the healthcare acquired infection rate in hospitals. The overall average decrease in antimicrobial usage of 10.1% during the 12-month study while statistically significant could have been improved even further if the 0.5% AHP product had been used for longer than 4 months.

### Implications for AHP

Environmental Services serves an important role in infection prevention. A thorough review of protocols and products used is important to ensure a successful outcome. The AHP formulation used in this study is a One-Step Cleaner Disinfectant with an AHP concentration of 0.5% available in both Canada and the United States. The formula carries the following claims: 30-second sanitizing, 1-minute Bactericidal, 1-minute General Virucide, 5-minute Tuberculocide and 10-minute Fungicide.

### AHP Disinfectants are One-Step Disinfectant Cleaners

- AHP has proven cleaning efficiency resulting in added confidence that disinfection can occur which leads to lower costs and faster results

### 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 has been proven through peer reviewed studies to reduce HAIs

### AHP Disinfectants provide the perfect balance between safety and efficacy

- AHP is designed to be easier on employees and occupants resulting in protocol compliance
- AHP provides a HMIS rating of "0", meaning it has been proven to be non-toxic, non-irritating to eyes and skin and non-skin sensitizing and does not require the use of personal protective equipment to handle

### AHP Disinfectants are environmentally sustainable

- AHP's active ingredient, hydrogen peroxide, breaks down into water and oxygen leaving no active residues
- AHP is formulated to ensure that it will not negatively impact indoor air quality and has been approved as an asthma-safe product

### AHP Disinfectants are compatible

- AHP formulations are tested to ensure compatibility that preserve your investments in equipment, furniture and building surfaces by reducing corrosion and wear

The abstract can be downloaded at:

[http://virox.com/files\\_docs/content/pdf/en/download/Effects%20of%20an%20Environmental%20Services%20Professional%20Training%20Course%20and%20Cleaning%20Products%20on%20the%20Rates%20of%20Infection%20Seen%20at%20Suburban%20Hospital.pdf](http://virox.com/files_docs/content/pdf/en/download/Effects%20of%20an%20Environmental%20Services%20Professional%20Training%20Course%20and%20Cleaning%20Products%20on%20the%20Rates%20of%20Infection%20Seen%20at%20Suburban%20Hospital.pdf)