



Understanding the Essentials of Germicidal UV Light (Infection Control Today, 2015)

Abstract

Healthcare facilities wanting to supplement their existing environmental hygiene strategies are exploring how ultraviolet light can bolster manual cleaning and disinfection practices. Experts emphasize that a comprehensive multi-modal approach to environmental cleaning is imperative and that the technology should be an adjunct intervention to routine manual cleaning and disinfection protocols. As Barbut (2015) emphatically states, *"The new no-touch methods for room disinfection supplement, but do not replace daily cleaning"*.

Background

While patient rooms are regularly cleaned and disinfected using manual techniques, evidence suggests that the adequacy of cleaning is often suboptimal, particularly when the focus is only on those surfaces perceived to be high-risk or frequently contacted (high-touch). As well, when cleaning, sufficient wet contact time between the surface and disinfectant is needed to ensure adequate disinfection, but is not always achieved. Inadequate cleaning using manual techniques prompted the development of no-touch systems that can decontaminate objects and surfaces in the patient environment.

Understanding Germicidal UV Light

UV light works primarily by inactivating the DNA or RNA in microorganisms.

It is important to recognize that UV light technology decontaminates microorganisms when they are in a direct line of sight of the UV device. This may require more than one placement of a UV device in an area with many hard-to-reach surfaces. UV efficacy is also dependent on a number of variables. As stated in the CDC's Guideline for Disinfection and Sterilization in Healthcare Facilities (2008), *"UV radiation has several potential applications, but unfortunately its germicidal effectiveness and use is influenced by organic matter; wavelength; type of suspension; temperature; type of microorganisms; and UV intensity"*. It is for these reasons that UV light technologies can supplement and complement infection control protocols but should not replace manual cleaning and disinfection.

Considerations When Evaluating and Purchasing UV Disinfection Devices

Consider introducing UV light disinfection devices into intensive care units and other high-infection risk patient care areas understanding

that these technologies do not obviate the need for other infection control practices. Like bringing in any new technology or product, creating a phased-in implementation approach that includes staff training to ensure understanding of the technology and its implications for other aspects of infection control ensures consistent infection prevention protocols. Training staff for proper terminal cleaning, robotic cleaning, and infection prevention practices are key to a successful infection prevention program. Lastly, clinical literature of UV device evidence of effectiveness should be monitored as currently the evidence base is limited by weak study designs, lack of consensus around important concepts (such as cleanliness thresholds), and reliance on nonclinical outcomes.

Conclusions

Contaminated surfaces in healthcare facilities may contribute to the transmission of pathogens implicated in nosocomial infections emphasizing the importance of effective infection prevention programs. UV light disinfection devices complement infection prevention programs but does not replace the need for manual cleaning and disinfection, thus utilizing a multi-modal approach.

Implications for AHP®

Accelerated Hydrogen Peroxide® (AHP®) is a relatively new yet clinically proven technology that has been associated in reducing hospital-associated infections¹ without the financial burden of UV light systems.

AHP® Disinfectants are One-Step Disinfectant Cleaners

- AHP® has proven cleaning efficiency resulting in 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® Disinfectants provide the perfect balance between safety and efficacy

- AHP's® non-toxic, non-irritating to eyes and skin and non-skin sensitizing formula is designed to be easier on employees and occupants resulting in protocol compliance

PTSHH0174.0(06/2016)

DISINFECTION DIGEST

...FOCUSED ON SCIENCE



Understanding the Essentials of Germicidal UV Light (Infection Control Today, 2015)

AHP® Disinfectants are environmentally sustainable

- AHP's® active ingredient, hydrogen peroxide, breaks down into water and oxygen leaving no active residues and will not negatively impact indoor air quality

AHP® Disinfectants are compatible

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

ⁱ Use of a daily disinfectant cleaner instead of a daily cleaner reduced hospital-acquired infection rate. AJIC 43 (2015) 141-6

PTSHH0174.0(06/2016)