

available, as is the case in most low- and middle-income countries. Neither automated nor any manual cleaning regimes were able to completely remove biofilm and soil from the forceps hinged area, and the amount of protein left after automated and DMC plus hinge brushing was higher than the recommended. Cleaning is the most important step for the reprocessing of reusable medical devices; thus, efforts must be undertaken to improve cleaning in different social and economic realities and scenarios.

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Presentation Type:

Poster Presentation

Evaluation of a Continuous Decontamination Technology in an Intensive Care Unit

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Background: The scientific literature increasingly indicates the need for the development of continuous disinfection to address the persistent contamination and recontamination that occurs in the patient rooms despite routine cleaning and disinfection.

Methods: To determine a baseline microbial burden level on patient room surfaces in the intensive care unit (ICU) of a large urban hospital, 50 locations were swabbed for total colony-forming units (CFU) and the prevalence of methicillin-resistant *Staphylococcus aureus* (MRSA). Once the baseline in ICU patient rooms was established, 5 novel decontamination devices were installed in the HVAC ducts near these patient rooms. The devices provide a continuous low-level application of oxidizing molecules, predominately hydrogen peroxide. These molecules exit the duct and circulate in the patient room through normal convection, landing on all surfaces. After activation, environmental sampling was conducted every 4 weeks for 4 months. The effect from continuous low levels of oxidizing molecules on the intrinsic microbial burden and the prevalence of MRSA were analyzed. In addition to external laboratory reports, the facility tracked healthcare-associated infections (HAIs) in the unit. HAI data were averaged by month and were compared to the preactivation average in the same unit. **Results:** The preactivation average microbial burden found

on the 50 locations were 179,000 CFU per 100 in². The prevalence of MRSA was 71% with an average of 81 CFU per 100 in². After activation of the devices, levels of microbial burden, prevalence of MRSA, and average monthly HAI rates were all significantly lower on average: 95% reduction in average microbial burden (8,206 CFU per 100 in²); 81% reduction in the prevalence of MRSA (13% vs 71%); 54% reduction in the average of health-care-onset HAIs. All data were obtained from the averages of sampling data for 4 weeks during the 4-month trial period. **Conclusions:** The continuous application of low levels of oxidizing molecules throughout the patient rooms of an ICU demonstrated 3 outcomes: reduced overall surface microbial burden, lowered the incidence of MRSA, and significantly decreased the monthly average HAI rate. Please note, the ICU ran other infection prevention interventions at this time, including standard cleaning, as well as and their standard disinfecting techniques.

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Poster Presentation

Firefighters Fighting Germs - Evaluation of a Disinfecting Protocol for Use in the Fire Service

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Background: Pasco County Fire Rescue (PCFR) is a rapidly growing suburban fire department located in Florida. PCFR employs >500 firefighters (all cross-trained as either emergency medical technicians or paramedics) in 27 stations to provide both emergency medical services (EMS) and fire suppression response. Although multiple studies have established that pathogens are present in both apparatus and stations within the fire service, there is a knowledge gap regarding the effectiveness of cleaning and disinfecting protocols in this specific setting. **Methods:** In total, 65 high-touch surfaces in 11 vehicles (ambulances and engines) and common areas of 2 fire stations were swabbed before and after disinfection. Vehicle surfaces swabbed included seats, cabinet doors, door handles, stretchers, medical equipment, keyboard, steering wheels, shared headsets and hand rails. Inside the stations, the refrigerator handle, television remote, radio and alarm buttons, door handles, and locker handles were swabbed. Immediately

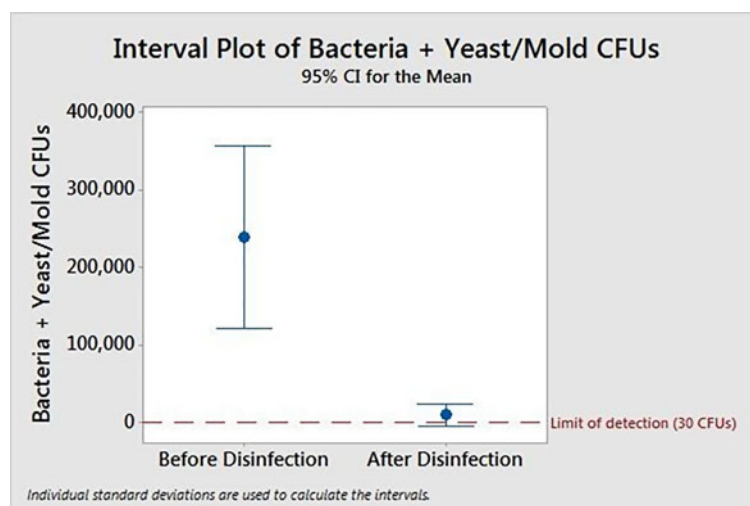


Fig. 1.