EVALUATION OF AN ENCLOSED ULTRAVIOLET RADIATION DEVICE FOR DISINFECTION OF MOBILE HANDHELD DEVICES

· Session: Poster Abstract Session: Cleaning and Disinfection in Healthcare Settings

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Background: Mobile handheld devices (MHDs) are ubiquitous in healthcare settings, both for personal use and for delivery of patient care. In hospitals, MHDs are frequently contaminated with pathogenic bacteria, but seldom cleaned. Because wiping MHDs with disinfectants can negatively affect screen quality, there is a need for new disinfection methods that are rapid and effective against a wide range of healthcare-associated pathogens.

Methods: The Sky™ 6Xi device (Daylight Medical, Inc.) is an enclosed box with a conveyor belt that delivers ultraviolet-C radiation in close proximity to MHDs (e.g., iPad™, Tablet PCs, cell phones), moving devices at a speed of 0.4" per second. We examined the efficacy of the device against methicillin-resistant Staphylococcus aureus (MRSA) using a modified ASTM International method. To assess "real-world" efficacy, we cultured MHDs of healthcare staff before and after use of the device.

Results: The Sky™ 6Xi device reduced recovery of MRSA by 5.10 log_{10}CFU and was only modestly affected by organic load. Of 50 healthcare staff MHDs cultured, 46 (92%) had positive aerobic colony counts versus 9 (18.0%) after use of the device (P<0.001); the mean aerobic count on MHDs decreased from 46.5 to 0.4 colony forming units (CFU) (P<0.001) after use of the device. Of the 50 MHDs cultured before use of the device, 4 (8%), 2 (4%), and 2 (4%) were contaminated with MRSA, C. difficile, and Gram-negative bacilli, respectively; all were culture negative after use of the device. No adverse effects on MHD surfaces were observed after repeated exposure to the device. The device required approximately 15 seconds to disinfect a standard cell phone and 50 seconds to disinfect an iPad™.

Conclusion: The Sky UV device is a novel technology that is effective for safe and rapid disinfection of healthcare-associated pathogens from MHDs.

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· Disclosures:

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