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Use of a persistent, water-based sanitizer with anti-viral properties reduces nosocomial infection in long term care facility

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Statement of the Problem: Nosocomial infections are a significant risk factor for morbidity, mortality, and hospital re-admittance for residents of long-term care facilities (LTCFs). The alcohol-based sanitizers used in many facilities are rapidly germicidal, but have no persistent (ie, residual) effect, so there is no protection against immediate recontamination of the hands. Alcohol sanitizers were found to be less effective against the Norovirus than either soap and water or simply a water rinse alone. In a CDC study of 91 LTCFs, facilities relying on alcohol sanitizers were six times more likely to experience a Norovirus outbreak. This study evaluates whether replacing an alcohol sanitizer with a water-based antiseptic with persistent and anti-viral efficacy reduces nosocomial infection in LTCFs.

Methodology: In a 280-bed LTCF (Meadowbrook Care Center, Long Island, NY), 25 sanitizer dispensers in staff-only locations were switched from an alcohol sanitizer (Purell®, 70% ethyl alcohol) to a water-based, persistent sanitizer (Zylast® Antiseptic Lotion, 0.2% BZT). These locations included near time cards, staff lounges, and any place a current alcohol-based sanitizer was located. No changes were made to the soap used in the facility or any staff policies and procedures regarding hand hygiene. The facility continued to monitor nosocomial infections monthly for a total of 27 months (18 control, 9 experimental).

Findings: Overall nosocomial infection was significantly reduced by 17% (p=0.03). Significant reductions were also seen in URT infections (46% reduction, p=0.05), EENT (37%, p=0.02), and other infections (58%, p=0.04). A trend towards reduced illness was noted with GI infections (31% reduction, p=0.19). A slight improvement was seen with skin infections (10%), no change was seen with urinary tract infections, and an increase in lower respiratory infections (often associated with ventilator usage) was noted.

Conclusion: A persistent, water-based sanitizer with anti-viral efficacy was demonstrated to significantly reduce the risk of nosocomial infection in long-term care facilities. This is consistent with reports that products with persistent efficacy have lowered infection rates in hospitals and schools over hand hygiene products with solely immediate effect.

Biography

Steven Czerwinski has spent 25 years as a Chemist in the US Army's Medical Service Corps and retired at the rank of Major. As a US Army Chemist, he served as a Clinical Chemist at several major US Army Medical Centers, as well as an Environmental Organic Chemist and Biomedical Researcher at Aberdeen Proving Ground in Maryland. He has studied Physics (BA) at Knox College, Galesburg, Illinois; Chemistry (MS) at DePaul University, Chicago; and Pharmacology (PhD) at University of Maryland, Baltimore. After his military career, he has spent over ten years as a college Professor by teaching chemistry, earth science, and, most recently, pharmacology and pathophysiology for Morgan State University (Baltimore) in the Baccalaureate Nursing Program. He is currently the Acting Chair of the Medical Advisory Board for Innovative BioDefense, Inc.

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