

Copper reduces infection risk by more than 40 percent

July 1 2011



This is professor Bill Keevil of the University of Southampton. Credit: University of Southampton

Professor Bill Keevil, Head of the Microbiology Group and Director of the Environmental Healthcare Unit at the University of Southampton, has presented research into the mechanism by which copper exerts its antimicrobial effect on antibiotic-resistant organisms at the World Health Organization's first International Conference on Prevention and Infection Control (ICPIC).

'New Insights into the Antimicrobial Mechanisms of Copper Touch Surfaces' observes the survival of pathogens on conventional hospital touch surfaces contributes to increasing incidence and spread of antibiotic resistance and infections. Keevil proposes antimicrobial copper surfaces as one way to address this, since they achieve a rapid kill of significant bacterial, viral and [fungal pathogens](#).

He reported studies on dry surfaces with a range of pathogens, concluding that: "Copper's rapid destruction of pathogens could prevent mutational resistance developing and also help reduce the spread of [antibiotic resistance genes](#) to receptive and potentially more virulent organisms, as well as genes responsible for [virulence](#). Additionally, copper touch surfaces could have a key role in preventing the transmission of healthcare-associated infections. Extensive [laboratory tests](#) have demonstrated copper's antimicrobial efficacy against key organisms responsible for these infections, and [clinical trials](#) around the world are now reporting on its efficacy in busy, real-world environments."

The latest trial – conducted in intensive care units at three facilities in the United States – has shown that the use of antimicrobial copper surfaces in intensive care unit rooms resulted in a 40.4% reduction in the risk of acquiring a hospital infection.

The study, funded by the US Department of Defense, was designed to determine the efficacy of antimicrobial copper in reducing the level of pathogens in hospital rooms, and whether such a reduction would translate into a lower rate of infection.

Researchers at the three hospitals involved in the trial – Memorial Sloan Kettering Cancer Center in New York, the Medical University of South Carolina (MUSC) and the Ralph H. Johnson VA Medical Center, both in Charleston, South Carolina – replaced commonly-touched items such as

bed rails, overbed tray tables, nurse call buttons and IV poles with antimicrobial copper versions.

Data presented today by trial leader Dr Michael Schmidt, Professor and Vice Chairman of Microbiology and Immunology at MUSC, at ICPIC, demonstrated a 97% reduction in surface pathogens in rooms with copper surfaces, the same level achieved by "terminal" cleaning: the regimen conducted after each patient vacates a room.

Dr Schmidt said of the results: "Bacteria present on ICU room surfaces are probably responsible for 35-80% of patient infections, demonstrating how critical it is to keep hospitals clean. The copper objects used in the clinical trial supplemented cleaning protocols, lowered microbial levels, and resulted in a statistically significant reduction in the number of infections contracted by patients treated in those rooms."

Provided by University of Southampton

Citation: Copper reduces infection risk by more than 40 percent (2011, July 1) retrieved 6 May 2024 from <https://medicalxpress.com/news/2011-07-copper-infection-percent.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--