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Breaking the chain of infection: How copper can help tackle antimicrobial resistance

Antibiotics gave a miraculous boost to healthcare efficiency, saving lives and improving outcomes. But Antimicrobial Resistance (AMR) is narrowing our drug-based treatment options to the point where certain infections won't respond to even our "last resort" antibiotics. Prevention of infection has taken centre stage once again with renewed focus on cleaning and hand hygiene. However, these are time-consuming and human behavior is hard to change. Healthcare Associated Infections (HCAIs) remain prevalent with significant impact on clinical resources and patient safety. Novel no-touch disinfection systems have been developed with some benefit but drawbacks include cost and room downtime. This presentation explores the evidence relating to touch surfaces made from metallic copper and copper-alloys (antimicrobial copper). Particular focus is paid to the evidence of in situ antimicrobial efficacy under real life conditions in busy clinical settings. The robust evidence of dramatically reduced microbial bioburden on copper surfaces is supported by laboratory testing confirming rapid destruction of pathogens' genomic material (including plasmids) on copper. Horizontal gene transfer, a key mechanism in the development of AMR, which occurs on standard touch surfaces, does not take place on copper ones. Patient outcome studies and cost-benefit research undertaken by York Health Economics Consortium indicate that installing antimicrobial copper touch surfaces improves the efficiency of healthcare by significant reduction of HCAIs and clinical costs, plus freed-up beds. Use of clinical touch-surface made items from antimicrobial copper is a passive adjunctive measure to reduce antibiotic usage, improve patient safety and healthcare efficiency.

Biography

Andrew Cross specializes in exploiting copper's intrinsic antimicrobial properties to reduce infection risk from touch surfaces. He offers product advice and consultancy to healthcare providers, architects/designers, construction professionals and helps manufacturers to develop new products. He has also helped the Copper Development Association develop educational materials on the scientific, practical and economic aspects of deploying copper for infection control. His long-term experience with the use of copper alloys for specialist engineering and architecture provides a sound practical foundation, combining this with the latest published research enables successful translation of a concept into healthier buildings with tangible benefits for people and organizations.

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