University Hospitals Birmingham NHS Foundation Trust

Antimicrobial Copper Cu+

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Antimicrobial Copper Pens Tested in CCUs Less Contaminated

A clinical study has demonstrated that antimicrobial copper pens used in critical care units had significantly fewer microbes on them at the end of a shift and thus reduced the risk of recontaminating healthcare workers' hands.

Contaminated pens may re-inoculate a healthcare worker's hands after they have been washed, and this concern led the research team at University Hospitals Birmingham NHS Foundation Trust to put antimicrobial copper to the test. This study followed on from an earlier trial at the Trust's Selly Oak site, which demonstrated significantly-reduced levels of microoganisms on copper touch surfaces on a medical ward compared to standard items made from aluminium, chrome-plate and plastic.

In the latest study, staff in two busy critical care units were given the same design of pen made from either stainless steel or brass, an alloy of copper and zinc. A total of 100 pens were allocated using a computer-generated randomisation table at the start of a 12.5-hour shift for use in place of the standard black pens. Contamination on each type of pen was measured and compared at the end of the 12.5 hour working shift (25 brass and 25 stainless steel pens) and then after sitting at room temperature for a further 11 hours, equivalent to the start of the next shift (25 brass and 25 stainless steel pens). Nurses were entered into the study only once, and all were actively caring for patients.

The study found that, at the end of the working shift, 52% of the brass pens were contamination-free, compared to 32% of the stainless steel pens. Most significantly, the total contamination on the brass pens was 87.3% less than on the stainless steel pens.

After a further 11 hours at room temperature, 80% of the brass pens were contamination free, compared to 28% of the stainless steel pens and the total contamination on the brass pens was 94.8% less than the stainless steel pens.

This led study-leader Dr Anna Casey to conclude: "Our findings clearly demonstrate that the use of copper-containing pens significantly reduces the level of microbial contamination on writing instruments. Thus, copper pens may provide a tool to prevent re-inoculation of decontaminated hands."

The study will be published in the next issue of the American Journal of Infection Control[i].

For more information about copper's antimicrobial properties, and case studies of healthcare facilities around the world taking advantage of it, visit www.antimicrobialcopper.com.

	
Brass pen	Brass and stainless steel pens

[i] *A comparative study to evaluate surface microbial contamination associated with copper-containing and stainless steel pens used by nurses in the critical care unit, Anna L. Casey PhD et al., available online 12th June 2011*
http://www.sciencedirect.com/science/article/pii/S0196655311001131

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