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An ancient metal – copper - the new weapon against superbugs

Copper Clinical Trial Launched

A Birmingham hospital will launch an *18-month clinical trial* in April 2007 to establish whether the installation of *copper* surfaces will kill MRSA and other hospital-acquired infections.

Like many other hospitals across Europe, *Selly Oak Hospital*, part of the University Hospital Birmingham NHS Trust, has been fighting superbugs such as MRSA. Laboratory tests at Southampton University have established that the natural antimicrobial properties of copper and copper alloys dramatically reduce the presence of MRSA compared with stainless steel, the most commonly used surface-metal in health institutions. Now the findings will be put to the test in a real hospital environment. If the trial is successful, copper could be installed widely to cut the death-rate from hospital-acquired infections. According to the National Audit Office, 300,000 patients pick up infections in hospital each year in the UK. At least 5,000 are likely to die as a result. The cost to the NHS is estimated at £1 billion per year.

Selly Oak has been chosen for the *Copper Clinical Trial* because it is a multi-specialist centre with an advanced microbiology centre. One general medical ward is already having copper installed in preparation for the trial. Because 80% of MRSA transmission is through surface contacts, stainless steel door handles and push-plates are being replaced by copper, along with bathroom taps, toilet flush-handles and grab rails. Even the pens used by the staff will be a high-copper brass. A similar ward next door will retain its traditional metal fittings and will act as a control in the experiment. If the laboratory results are successfully replicated, it is likely that thousands of hospitals across Europe will introduce copper alloy fittings.

The hospital Trust's Deputy Medical Director, Professor Tom Elliott, says, "Potentially it is very, very exciting if we find that copper actually works in a clinical environment, following the laboratory tests in Southampton and here in Birmingham". The tests have been showing striking results. The MRSA bacteria (staphylococci) on stainless steel remained fully active for days. On brass (an alloy of copper and zinc) they died in less than 5 hours and on pure copper the superbugs were eliminated in 30 minutes.

The Director of the Environmental Healthcare Unit at Southampton University, Professor Bill Keevil, says that copper suffocates the germs. “The metal reacts with the bacteria and inhibits their respiration – in effect it stops them breathing. In fact if you look back in the literature the Egyptians were using copper thousands of years ago to treat infections!” The tests show that it is not just MRSA that can be killed by copper. The newer threat, the extremely resistant *Clostridium difficile* can also be killed, as demonstrated by preliminary tests. Scientists are already considering wider medical applications for copper, including a possible defence against bird flu. Experiments by the Southampton team have shown that the metal can kill the human flu virus. Professor Keevil says, “Avian flu is almost identical to normal human flu so, although we haven’t done the work yet, we would predict the same results”.

Copper Development Association has been working with the supply chain to support the development of copper and copper alloy healthcare products for the trial through the provision of information on the efficacy of different copper alloys and their suitability for different applications. Any stakeholder with an interest in designing out infection in hospitals – architects, designers, facilities managers, material suppliers and product manufacturers - are welcome to join the Antimicrobial Copper Interest Group to be kept up to date with the latest news and as a networking opportunity. Further information on antimicrobial properties of copper can be found at www.cda.org.uk/antimicrobial.

Contacts for further information:

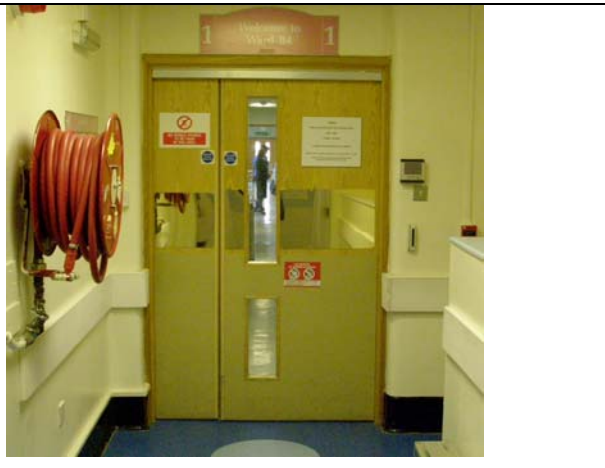
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Note to editors:

To view film footage visit:

www.cda.org.uk/antimicrobial/copper-clinical-trial.wmv (available from Wednesday 14th March 2007, 10:00)



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