

An ancient metal – copper - the new weapon against hospital superbugs

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 copper alloy. 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-based 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. And 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".

Press Conference, Brussels, 10.30 a.m., on 13th March 2007

Details of the Birmingham trial will be given at a Press Conference about the latest applications for copper, hosted by the ECI (European Copper Institute) at the Residence Palace, 155-175 Rue de la Loi, 1040 Brussels. If you wish to attend please contact Anna Macdougald, Tel: +32 477 60 26 74 email: anna@eu4u.be

Contacts for further information:

Angela Vessey, Copper Development Association

Tel: 01442 275705. Mobile: 07709 436275, angela.vessey@copperdev.co.uk

Christian de Barrin, ECI.

Tel: +322 777 7082. Mobile: +32 476 30 99 60 cdb@eurocopper.org

Professor Tom Elliott, Deputy Medical Director, University Hospital Birmingham NHS Trust

Tel: 0121 627 2978 (Louise Rowan, Press Office) Louise.Rowan@uhb.nhs.uk

Professor Bill Keevil, Director of Environmental Healthcare Unit, School of Biological Sciences, University of Southampton

Tel. : + 023 8059 4726. cwk@soton.ac.uk

Note for TV Correspondents:

Broadcast-quality video is available from the ECI, showing preparations at Selly Oak Hospital and the laboratory in Southampton, with interviews about the Copper Clinical Trial. Contact Christian de Barrin if you need a copy.