

Solution to Hospital Infections Could Be In the Air

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A breakthrough in the fight against infections acquired in hospital could be achieved thanks to pioneering new research.

The project is investigating the use of ionizers to eradicate airborne infections in hospitals – a technique that could deliver major health benefits and financial savings.

Starting in December, the 3-year initiative will be carried out by engineers at the University of Leeds with funding from the Swindon-based Engineering and Physical Sciences Research Council (EPSRC).

Infections originating in hospital are a serious and widespread problem, affecting around 10% of patients during their stay. There is increasing evidence that up to 20% of these infections are transmitted by an airborne route – at a cost of £100-200 million a year in England alone.

The project will build on a recent successful study at St James's University Hospital in Leeds. This found that using ionizers to negatively charge air particles in an intensive care unit prevented all infections caused by the *Acinetobacter* pathogen. Immune to nearly all currently available antibiotics, *Acinetobacter* infections are a growing problem in hospitals and can be fatal in some groups of patients.

In the new project, the same team will set out to understand the science behind this success and provide a firm basis for future use of the technique. They will focus on the biological and physical processes associated with negative air ionization and airborne transmission of infection, and establish guidelines for the effective use of ionizers in hospital buildings.

Much of the research will be carried out in the University's state-of-the-art aerobiological test facility, which was part funded by EPSRC. The facility incorporates a 32m³ climatic chamber where temperature, humidity and ventilation rate can be varied and controlled. The chamber enables researchers to mimic various clinical environments and perform a wide range of experiments involving aerosols doped with micro-organisms.

The project team is being led by Dr Clive Beggs of the University of Leeds' Aerobiological Research Group. Dr Beggs says: "Negative air ionization could have a dramatic impact on a problem that has been attracting increasing publicity and causing growing concern".

Reference: <http://www.spacedaily.com/news/spacemedicine-03zo.html>



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