

Can we 'wipe out' MRSA?

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Three basic principles is all it could take to reduce the incidence of MRSA in hospitals according to a new research by Cardiff University.

Disinfectants are routinely used on hard surfaces in hospitals to kill bacteria, with antimicrobial containing wipes increasingly being employed for this purpose. Antimicrobial wipes were first introduced in 2005 in hospitals in Wales.

A study by the University's Welsh School of Pharmacy looked into the ability of antimicrobial-surface wipes to remove, kill and prevent the spread of such infections as MRSA. They found that current protocols utilised by hospital staff have the potential to spread pathogens after only the first use of a wipe, particularly due to the ineffectiveness of wipes to actually kill bacteria.

The team, led by microbiologist Dr Jean-Yves Maillard is now calling for a 'one wipe – one application – per surface' approach to infection control in healthcare environments.

The research involved a surveillance programme observing hospital staff using surface wipes to decontaminate surfaces near patients, such as bed rails, and other surfaces commonly touched by staff and patients, such as monitors, tables and key pads. It was found that the wipes were being applied to the same surface several times and used on consecutive surfaces before being discarded.

These actions were then replicated in the lab alongside a three-step system, developed by the research team to test the ability of several commercially available wipes to disinfect surfaces contaminated with strains *Staphylococcus aureus*, including MRSA and MSSA. The system tested the removal of pathogens, the transmission of them, and the anti-microbial properties of wipes.

The study revealed that although some wipes can remove higher numbers of bacteria from surfaces than others, the wipes tested were unable to kill

the bacteria removed. As a result, high numbers of bacteria were transferred to other surfaces when reused.

Dr Gareth Williams, microbiologist at the Welsh School of Pharmacy, said: "Claims of effectiveness, such as 'kills MRSA', are ubiquitous on the packaging of antimicrobial-containing wipes. Methods currently available to test the performance of these products may be inappropriate since they do not assess the ability of wipes to actually disinfect surfaces. We have developed a simple, rapid, robust and reproducible method which will help identify best practice in the use of the wipes.

"Our surveillance study in its own right has been highly revealing in that it has highlighted the risks associated with the way decontamination products are currently being deployed in Welsh hospitals and the need for routine observation as well as proper training in the use of these wipes in reducing risks of infection to patients.

"On the whole, wipes can be effective in removing, killing and preventing the transfer of pathogens such as MRSA but only if used in the right way. We found that the most effective way is to prevent the risk of MRSA spread in hospital wards is to ensure the wipe is used only once on one surface."

It is anticipated the research will promote a UK and worldwide routine surveillance programme examining the effectiveness of disinfectants used in hospitals, and if applied will help assure the public that control measures are being carefully scrutinised would undoubtedly be beneficial.

Source: Cardiff University

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