

UV lotion lights the way to cleaner facilities

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A team of Canadian scientists using a lotion which glows under ultraviolet light have shown that up to a third of patient toilets are not properly cleaned. Their findings, published in BioMed Central's journal, *BMC Infectious Diseases*, also show that spores from the nasty bacteria *Clostridium difficile* (*C. difficile*) linger in the loo even when it has been thoroughly wiped down.

Michelle Alfa and a team of scientists from Manitoba, Canada investigated the spread of so-called superbugs in hospitals. Hospital patients are thought to catch bugs like vancomycin resistant *Enterococci* (VRE), methicillin resistant *Staphylococcus aureus* (MRSA) and *C. difficile* because they are not eradicated from the hospital environment. These bugs may be transferred between patients through cross-contamination in the bathroom.

"Various studies have looked at the most effective cleaning agents, but none of these studies considered whether housekeeping staff were actually cleaning the toilets properly," says Alfa. "It is impossible to assess the effectiveness of any action against these bacteria unless you can be sure that cleaners comply with protocols."

Alfa's toilet inspectors smeared the UV lotion under the seats of 20 toilets and commodes being used by patients with diarrhoea at a hospital in Winnipeg. Seven of these patients had *C. difficile* infection, while 13 others did not. The toilets and commodes were tested every weekday for six months and checked using UV light to determine how well they had been cleaned. In addition, samples were taken from toilet surfaces to determine whether *C. difficile* spores were present.

The UV marker revealed that the commodes for the seven patients isolated with *C. difficile* infections had not been properly cleaned 72% of the time. The toilets fared slightly better, with half of the samples taken showing no residual UV lotion after cleaning. The 13 patients not on isolation had much cleaner toilets, with only 14% glowing

brightly under UV light. Further assessments showed that differences in toilet cleaning were "ward dependent" and since specific cleaners work on different wards, the results likely reflect characteristics of the individual cleaning staff.

More worryingly, *C. difficile* was still detected in 40% of samples taken from the cleanest toilets (i.e. those with no detectable UV marker). "This suggests that both the physical cleaning action as well as the disinfectant/cleaning agent were ineffective for killing and/or removing *C. difficile* from toilets," notes Alfa.

"Our data suggest that without an agent with some activity against *C. difficile* spores the physical action of cleaning alone cannot be relied upon to effectively eradicate this organism from the toilets of patients who are shedding this type of spore. Nevertheless, we would still recommend that monitoring with a UV marker becomes a routine part of a hospital's housekeeping quality assurance programme.

Source: BioMed Central

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