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Medical News

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Effects of Cleaning and Disinfection in Reducing the Spread of Norovirus Contamination via Environmental Surfaces

Barker and colleagues from the Department of Pharmaceutical and Biological Sciences, School of Life and Health Sciences, Aston University, Birmingham, United Kingdom, used a reverse transcriptase polymerase chain reaction assay to study the transfer of Norovirus (NV) from contaminated fecal material via fingers and cloths to other hand-contact surfaces. The results showed that, where fingers come into contact with virus-contaminated material, NV is consistently transferred via the fingers to surfaces and from there to other typical hand-contact surfaces, such as taps, door handles, and telephone receivers. It was found that contaminated fingers could sequentially transfer virus to up to seven clean surfaces. The effectiveness of detergent- and disinfectant-based cleaning regimens typical of those that might be used to decontaminate surfaces contaminated with feces and reduce spread of NV was also compared. It was found that detergent-based cleaning with a cloth to produce a visibly clean surface consistently failed to eliminate NV contamination where there was fecal soiling. Although a combined hypochlorite/detergent formulation at 5,000 ppm of available chlorine produced a signifi-

cant risk reduction, NV contamination could still be detected on up to 28% of surfaces. In order to consistently achieve good hygiene, it was necessary to wipe the surface clean using a cloth soaked in detergent before applying the combined hypochlorite/detergent. When detergent cleaning alone or combined hypochlorite/detergent treatment failed to eliminate NV contamination from the surface and the cleaning cloth was then used to wipe another surface, the virus was transferred to that surface and to the hands of the person handling the cloth. In contrast, when surfaces were contaminated with NV-infected fecal suspension diluted to 1 in 10 and 1 in 80, intended to simulate surfaces that have become contaminated after secondary transfer, treatment with a combined bleach/detergent formulation, without prior cleaning, was sufficient to decontaminate surfaces and prevent transfer.

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