

When it comes fighting to *C. difficile*, the Palme d'Or goes to soap and warm water

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Hospitals world-wide battle nosocomial infections on a daily basis. One of the most difficult bacteria to combat is *Clostridium difficile*. To help ensure the best control methods possible, Dr. Michael Libman, Director of the Division of Infectious Diseases at the McGill University Health Centre (MUHC), studied the most effective ways to eliminate *C. difficile* bacteria from the hands of health care workers, with the highest honour going to soap and warm water!

The results from this study were presented yesterday by Dr. Matthew Oughton, a researcher in Dr Libman's team, at the 47th Interscience Conference on Antimicrobial Agents and Chemotherapy in Chicago.

Dr. Libman's team, which included Dr. Oughton, Dr. Vivian Loo, director of the MUHC Department of Microbiology, and Susan Fenn, MUHC assistant Chief Technologist, tested five separate hand washing protocols that emulated hospital conditions as closely as possible. After the hands of the ten volunteers were contaminated with *C. difficile*, they washed successively with: regular soap and warm or cold water, antiseptic soap and warm water, an alcohol-based solution, and eventually with a disinfectant towel. "The results were striking: the protocols that involved washing with water eliminated more than 98% of the bacteria, while washing with an alcohol-based solution eliminated almost none! The protocol involving a disinfectant towel eliminated around 95% of bacteria." stated Dr. Oughton.

A characteristic of the bacteria family to which *Clostridium difficile*

belongs is the ability to produce spores when under stress. These spores, which are highly resistant, then produce new bacteria when favourable conditions return. Eliminating them is a major part of the challenge in controlling the bacteria.

“We think that alcohol eliminates the 'living' bacteria but not the spores, whereas the mechanical action of washing combined with the chemical action of soap eliminates both,” explained Dr. Oughton. The alcohol “hand rubs” remain very effective and convenient for routine hand hygiene and eliminating non-spore producing bacteria. However, the study authors recommend using soap and water whenever contamination with *C.difficile* is suspected. Washing with soap and warm water also remains an excellent method to control nosocomial infections in general.

Source: McGill University

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