
**A Compendium of
Strategies to Prevent
Healthcare-
Associated Infections
in Acute Care
Hospitals**

Fall 2011 Update



Rationale for Hand Hygiene Recommendations after Caring for a Patient with *Clostridium difficile* Infection

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Questions frequently arise in regards to the recommended method of hand hygiene after caring for patients with *Clostridium difficile* infection (CDI). The CDI component of the SHEA / IDSA Compendium of Practice Recommendations to Prevent Healthcare-Associated Infections and the SHEA / IDSA Clinical Practice Guidelines for CDI recommend preferential use of soap and water for hand hygiene over alcohol-based hand hygiene products only in outbreak settings (BIII) (1;2).

Some have found the recommendation to preferentially perform hand hygiene with soap and water after caring for a patient with CDI only during outbreaks, and not in non-outbreak settings, confusing. Alcohol does not kill *C. difficile* spores (1). In addition, several studies have found hand washing with soap and water, or with an antimicrobial soap and water, to be more effective at removing *C. difficile* spores than alcohol-based hand hygiene products from the hands of volunteers inoculated with a known number of *C. difficile* spores (3;4).

The primary reason hand hygiene with soap and water is not recommended for CDI prevention in non-outbreak settings is there are no studies that have found an increase in CDI with the use of alcohol-based hand hygiene products or a decrease in CDI with the use of soap and water (5-11). Conversely, several of the studies did identify decreases in methicillin-resistant *Staphylococcus aureus* (6-8;11) or vancomycin resistant enterococcus (7) associated with the use of alcohol-based hand hygiene products. The combination of these findings, lack of change in CDI but decreases in other non-spore forming, multidrug resistant pathogens, with the use of alcohol-based hand hygiene products are the basis behind not recommending preferential use of soap and water for CDI prevention in non-outbreak settings. However because of the theoretical increase in risk of *C. difficile* transmission based on the volunteer hand contamination studies, the experts who wrote the CDI component of the SHEA / IDSA Compendium and the SHEA / IDSA Clinical Practice Guidelines for CDI felt it was prudent to recommend preferential use of soap and water after caring for a patient with CDI in outbreak settings.

There are several potential explanations for the lack of an association between CDI incidence and method of hand hygiene. One is healthcare workers may have continued to use soap and water after caring for patients with CDI during periods when alcohol-based hand hygiene products were the preferred method for hand hygiene. We feel this is an unlikely explanation since hand hygiene compliance is typically $\leq 40\%$ with the use of soap and water (12). A more likely explanation is it is recommended to don gloves prior to entering the room of a patient with CDI (1;2). Glove use is the only CDI prevention recommendation with the highest strength of recommendation and quality of evidence rating of "AI" (1;2;13). Gloves decrease risk of *C. difficile* transmission by preventing the contamination of healthcare worker hands with *C. difficile* spores (1;2;13;14). If gloves are removed properly to prevent hand contamination in the removal process, any potential benefit of using soap and water over alcohol-based hand hygiene products is likely negated.

In conclusion, although soap and water is superior to removing *C. difficile* spores from hands of volunteers compared to alcohol-based hand hygiene products, there have been no studies in acute care settings that have demonstrated an increase in CDI with alcohol-based hand hygiene products or a decrease in CDI with soap and water. This is why preferential use of soap and water for hand hygiene after caring for a patient with CDI is not recommended in non-outbreak settings. The recommendation to use soap and water preferentially in outbreak settings after caring for a patient with CDI is based on expert opinion as there are no data that demonstrate preferential use of soap and water for hand hygiene after caring for a patient with CDI in an outbreak setting is effective at preventing CDI.

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