
DATE: 09 August 2012

CONTEXT AND POLICY ISSUES

Hand hygiene is an important measure in infection control in healthcare settings. More and more hand-hygiene products have become available in the market and their use has increased in recent years. Besides the conventional plain soap and water, hand sanitizers that contain chemical agents with antimicrobial activity (such as chlorhexidine, quaternary ammonium compounds, iodophors, triclosan, ozone or alcohol) and do not need water or hand drying materials are also widely used.

Alcohol-based sanitizers are popular in various settings. They rapidly eradicate certain pathogens, however are not effective in killing spores of organisms such as Clostridium difficile or Bacillus anthracis. In addition, there are concerns associated with the use of alcohol-based sanitizers, such as flammability, religious concerns and abuse of the alcohol content. The incidence of intentional ingestion of alcohol-containing hand sanitizers has increased in the past few years, especially among individuals with a history of substance abuse, risk-taking behavior, or suicidal ideation.

Non-alcohol-based hand sanitizer could be an option. Some products have been examined in clinical studies. One study indicated that soaps with 0.15% triclosan or 0.3% farnesol provided rapid and broad-spectrum antimicrobial effectiveness in vitro. Another study suggested that chlorhexidine was superior to alcohol-based handrub in removing Clostridium difficile in healthcare professionals. The antimicrobial effectiveness of non-alcohol-based hand sanitizer in non-healthcare personnel in a health care setting is unknown.

The purpose of this report is to review the evidence regarding the effectiveness of non-alcohol-based hand sanitizer to reduce the infection rates and infection transmission in non-healthcare personnel in a health care setting.
RESEARCH QUESTIONS

1. What is the comparative clinical effectiveness of non-alcohol versus alcohol-based or no hand sanitizer for non-healthcare personnel in a health care setting?

2. What are the evidence-based guidelines for the provision of hand sanitizer to non-healthcare personnel in a health care setting?

KEY MESSAGE

No evidence regarding the effectiveness of non-alcohol-based hand sanitizer in non-healthcare personnel to reduce the risk of infection rates or infection transmission was identified. No evidence-based guidelines for the provision of hand sanitizer to non-healthcare personnel were identified.

METHODS

Literature Search Strategy

A limited literature search was conducted on key resources including PubMed, EBSCO CINAHL, The Cochrane Library (2012, Issue 7), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2007 and July 11, 2012.

Selection Criteria and Methods

One reviewer screened the titles and abstracts of the retrieved publications, and evaluated the full-text publications for the final article selection, according to the selection criteria present in Table 1.

Table 1: Selection Criteria

<table>
<thead>
<tr>
<th>Population</th>
<th>Adult non-healthcare personnel in a healthcare setting</th>
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<tbody>
<tr>
<td>Intervention</td>
<td>Non-alcohol-based hand sanitizers</td>
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<tr>
<td>Comparator</td>
<td>Alcohol-based hand sanitizers</td>
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<td></td>
<td>No hand sanitizer use</td>
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<tr>
<td>Outcomes</td>
<td>Infection rate, infection transmission</td>
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<tr>
<td>Study Designs</td>
<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized controlled trials, clinical practice guidelines</td>
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Exclusion Criteria

Studies were excluded if they did not meet the selection criteria, were duplicate publications, were abstracts or conference proceedings, were included in a selected systematic review, or were published prior to 2007.

SUMMARY OF EVIDENCE

Quantity of Research Available

The literature search yielded 191 citations. Upon screening titles and abstracts, 187 citations were excluded, and four potentially relevant articles were retrieved for full-text review. Of the four potentially relevant reports, none of them met the inclusion criteria. The process of study selection is outlined in the PRISMA flowchart (Appendix 1). The studies retrieved from the literature search were not relevant to our research questions. Some studies examined the effect of non-alcohol-based sanitizer in vitro or in healthcare professionals.

CONCLUSIONS AND IMPLICATIONS FOR DECISION OR POLICY MAKING

No conclusions can be drawn regarding the effectiveness of non-alcohol-based hand sanitizer as no clinical evidence was found.

PREPARED BY:
Canadian Agency for Drugs and Technologies in Health
Tel: 1-866-898-8439
www.cadth.ca
REFERENCES


APPENDIX 1: Selection of Included Studies

191 citations identified from electronic literature search and screened

187 citations excluded

4 potentially relevant articles retrieved for scrutiny (full text, if available)

4 reports excluded:
- irrelevant population (3)
- irrelevant intervention (1)

0 reports included in review