Increasing hand hygiene compliance to reduce infection rates: is valid comparison of compliance methods possible? A literature review
Bastian L, Edgecombe K, Bowden M

CRD summary
The authors concluded that multimodal strategies of hand hygiene appeared to be the most effective strategy for improving hand hygiene compliance, but further research was required. The limited search, lack of reporting of review methods and incomplete information about the studies made the reliability of the authors’ conclusions uncertain.

Authors’ objectives
To identify recent methods of increasing hand hygiene compliance in hospital settings.

Searching
MEDLINE and CINAHL were searched for full-text studies published in English between 2000 and 2007. Search terms were reported. Studies had to be accessed through Flinders University Library subscription journals.

Study selection
Quasi and pre-experimental studies of methods to increase hand hygiene compliance in hospital settings were eligible for inclusion. In the review, hand hygiene was defined as any hand-washing, antiseptic hand-wash or use of antiseptic hand rub.

The review classified intervention elements into the following seven types: unidirectional (one-way information directed at staff); physical (such as increasing hand rub availability); evaluative (interventions accommodated staff attitudes and beliefs); experiential (problem- or evidence-based); consultative (consultation between researchers and staff); patient-initiated; and organisational support. Most of the included studies included unidirectional or physical methods and most evaluated multimodal interventions. Studies collected data using observation, count device, use of rub or other resources or combinations of these methods. Studies were mainly conducted in intensive care units (including medical, surgical coronary care and neonatal) and interventions were carried out by health care workers.

The authors stated neither how papers were selected for the review nor how many reviewers performed the selection.

Assessment of study quality
Validity was assessed with respect to the following areas as described by Pollit and Beck: population and sample; ethical approval; methods of data collection; measurement; intervention; reliability and validity; statistical analysis; results; limitations discussed; and implications (further details were provided in the review). The authors did not state how the validity assessment was performed.

Data extraction
The authors stated neither how data were extracted for the review nor how many reviewers performed the data extraction. Each study was classified as showing compliance improved or not.

Methods of synthesis
The studies were grouped according to the intervention elements and combined in a narrative synthesis.

Results of the review
Eighteen studies were included (n≥60,000). Study designs were not reported.

Eight studies assessed outcomes using blinded observation, 16 described the intervention well and eight used reliable and valid methods to measure outcomes. All but three of the studies reported improved compliance associated with interventions.
No increase in hand hygiene compliance was found for two of 14 studies that included unidirectional elements, one of 11 studies that included physical elements, one of five studies that included consultative elements, none of four studies that included evaluative elements, neither of two studies that included patient-initiated elements and none of three studies that included organisational elements.

Authors' conclusions
Multimodal strategies of hand hygiene appeared to the most effective strategy for improving hand hygiene compliance, but further research was required.

CRD commentary
The review question was stated. Inclusion criteria were defined for participants and outcomes; criteria for study design were broad. Limiting the search to full-text English-language reports that were locally accessible may have resulted in the omission of other studies and raised the potential for publication and language bias. In view of the diversity among studies, a narrative synthesis was appropriate. Study validity was assessed, results were reported and some other limitations of the studies were discussed. However, interventions were generally poorly described, study design was not always clear, no details were given of methods used to classify studies as showing improved compliance or not, no indication was given of the size or statistical significance of the treatment effect size, and the synthesis did not consistently take account of study quality; this made it difficult to assess the strength of the evidence. The limited search, lack of reporting of review methods and incomplete information about the included studies meant that the reliability of the authors’ conclusions was uncertain.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors stated that there was a need for further research to evaluate interventions based on theories of adult learning and a need to clarify the meaning of sustained compliance to ensure consistency between future studies. More research was required to evaluate the following: evaluative; experiential; feasibility of patient-initiated methods in larger scale studies; effects of different elements; and cumulative effects of intervention elements. Future studies should assess outcomes using both hand hygiene rub usage and observational methods and consistently use the WHO hand hygiene compliance measurement tool.

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