



Review

# Systematic review of the effectiveness of strategies to encourage patients to remind healthcare professionals about their hand hygiene

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## ARTICLE INFO

### Article history:

Received 9 May 2014

Accepted 19 November 2014

Available online 16 December 2014

### Keywords:

Systematic review

Patient involvement

Hospital-acquired infections

Hand hygiene compliance



CrossMark

## SUMMARY

**Background:** Patients could help to improve the hand hygiene (HH) compliance of healthcare professionals (HCPs) by reminding them to sanitize their hands.

**Aim:** To review the effectiveness of strategies aimed at increasing patient involvement in reminding HCPs about their HH.

**Methods:** A systematic review was conducted across Medline, EMBASE and PsycINFO between 1980 and 2013.

**Findings:** Twenty-eight out of a possible 1956 articles were included. Of these, 23 articles evaluated the effectiveness of developed patient-focused strategies and five articles examined patients' attitudes towards hypothetical strategies. Sixteen articles evaluated single-component strategies (e.g. videos) and 12 articles evaluated multi-modal approaches (e.g. combination of video and leaflet). Overall, the strategies showed promise in helping to increase patients' intentions and/or involvement in reminding HCPs about their HH. HCP encouragement appeared to be the most effective strategy. However, the methodological quality of the articles in relation to addressing the specific aims of this review was generally weak.

**Conclusion:** A number of strategies are available to encourage patients to question HCPs about their HH. Better controlled studies with more robust outcome measures will enhance understanding about which strategies may be most successful and why.

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## Introduction

Hospital-acquired infections (HAIs) are a leading cause of iatrogenic harm worldwide. They can increase morbidity and mortality among patients, and place an economic burden on health systems.<sup>1,2</sup> In England alone, over 6% of hospital patients acquire an infection during their hospital stay (i.e. not present at the time of admission)<sup>3</sup> with projected costs to the National Health Service reaching nearly £1 billion annually.<sup>1,4</sup>

Internationally, 5–10% of patients admitted to acute care hospitals in developed countries will acquire an infection, while the rate for developing countries can exceed 25%.<sup>5–8</sup>

Although not all HAIs are preventable,<sup>9,10</sup> appropriate hand hygiene (HH) of healthcare professionals (HCPs) is the single most effective way to reduce the spread of antimicrobial-resistant bacteria and protect patients against HAIs.<sup>11–14</sup> Increasingly, studies are revealing negative correlations between the HH of HCPs and rates of HAIs,<sup>12</sup> with estimates that HCPs' correct hand sanitation<sup>12,14</sup> could prevent up to 50% of HAIs. Nevertheless, HH practice remains ineffective, and compliance with guidelines is persistently substandard.<sup>15–17</sup> Duration, technique and frequency of handwashing are not always appropriate,<sup>18–20</sup> with compliance levels ranging from 5% to 81%.<sup>14,21</sup> Barriers to correct HH practices include forgetfulness, lack of knowledge about expected standards, low priority, time constraints and inaccessible HH supplies.<sup>22–26</sup>

Traditionally, strategies aimed at improving HH have centred on the HCPs themselves,<sup>27</sup> and typically comprised in-service, behavioural modification or observational techniques.<sup>28</sup> These strategies have yielded short-term success,<sup>29,30</sup> but the longer-term impact has been negligible with rapid returns to baseline often displayed.<sup>31</sup> As multi-modal HH campaigns can sustain improvements most effectively,<sup>12,14,32</sup> involving patients in such endeavours could yield longer-term benefits.<sup>14,33</sup> Additionally, involving patients would enable continuous monitoring of HCPs' HH practices without the need for additional staff or resources. In the UK, the most notable example was the implementation of the National Patient Safety Agency's 'Clean Your Hands' campaign in 2004.<sup>34–36</sup> Using multi-faceted strategies to reduce rates of HAIs and healthcare-acquired infections (HCAIs), this campaign (no longer active) encouraged patients and their families to ask HCPs, 'Have you cleaned your hands?'. Internationally, similar initiatives<sup>37–39</sup> have resulted from use of the World Health Organization's standardized methodology for multi-modal HH promotion,<sup>40</sup> which supports the active and visible involvement of patients when feasible.

In theory, involving patients may seem simple. However, in practice, patients' willingness to question HCPs is consistently low.<sup>41–44</sup> Across the UK, USA, Canada, Australia, Switzerland and elsewhere, 32–91% of patients believe that asking these questions could help to reduce HAIs/HCAIs, but only 26–60% of patients state that they would actually question HCPs.<sup>39,45</sup> Even when patients report that HCPs do not sanitize their hands before treating them, they may still be unwilling to speak up.<sup>46</sup> Feeling uncomfortable or anxious about asking, being perceived as a nuisance, undermining HCPs' clinical abilities and creating an adverse effect on the HCP–patient relationship are key reasons for patients' apprehension.<sup>34,46–48</sup> Additionally, patients may feel that it is not their responsibility to ask, or they may assume that HCPs know about the importance of HH and have already cleaned their hands.<sup>34,46–48</sup>

In order to increase patients' willingness to question HCPs about HH, there is a need to understand and reduce potential barriers to asking questions. Achievement of this aim requires evaluation of the effectiveness of the different patient-focused strategies that have been implemented in this area. Several influential publications exist, including a review on supporting patient involvement in HH programmes;<sup>38</sup> an

international overview of HH campaigns, some of which involved the patient;<sup>37</sup> and a narrative overview of patient empowerment and HH improvements.<sup>39</sup> However, while these reports offer valuable insights, none of them have reviewed all the relevant evidence systematically. To the best of the authors' knowledge, the only systematic review was conducted in 2006,<sup>49</sup> and only examined a few interventions that had been tested in hospital wards (due to the limited evidence at the time).<sup>49</sup> Therefore, this study aims to update these findings and build on them by examining not only strategies that have been evaluated for their success in encouraging patients to question HCPs about their HH, but also the attitudes of patients towards other strategies that could promote the HH of HCPs. This paper presents a systematic review of the effectiveness of strategies to encourage patient involvement in improving HCPs' HH compliance. The review questions were:

- (1) What strategies (past and current) have been developed to encourage patients to remind HCPs about their HH?
- (2) How effective have these strategies been in increasing patients' intention to participate or their actual involvement?

## Methods

### Search strategy

EMBASE, MEDLINE and PsycINFO were searched for relevant literature published between January 1980 and August 2013. The search strategy comprised terms relating to: (1) patient involvement (e.g. patient participation); (2) HAIs (e.g. nosocomial infections); and (3) strategies (e.g. interventions). The search was customized to each database, and restricted to titles and abstracts to tighten the search specificity. A sensitivity analysis was performed to ensure that the search results included key articles identified through an initial scoping review. The final search was conducted on 24<sup>th</sup> August 2013 (see Box 1).

Forward and backward citation searching and hand searching of key behavioural science and patient safety journals was performed to minimize the likelihood of missing relevant papers.

### Inclusion/exclusion criteria

The authors were interested in empirical articles and reports that examined (either as a primary or secondary aim) strategies to encourage patients to question HCPs about their HH. This focus included patients verbally or visually reminding HCPs (e.g. by holding a sign). The term 'patient' was used broadly to encompass patients and members of the public that were being asked their views from the position of being a patient in hospital. Both 'lay' and 'expert' patients (defined as patients that worked in a clinical profession) were included. The term 'strategy' was operationalized as 'any method that has been empirically tested that aims to encourage patients to remind HCPs about their HH'. To be as comprehensive as possible, the authors considered strategies aimed at increasing both actual behaviour and intentions to participate. Articles summarizing key findings of strategies were included, even if no data/statistics were provided. Articles that described a

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