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Lindsay Grayson et al: The Australian National Hand Hygiene Initiative after 8 years: a longitudinal study

In *The Lancet Infectious Diseases* Grayson and colleagues report a national campaign to promote hand hygiene compliance that has been in operation throughout Australia since 2009.

Hand hygiene plays a major part in any infection prevention programme but securing compliance with hand hygiene protocols is notoriously difficult [1]. Maintaining long-term improvement is an even greater challenge [2]. The World Health Organization [1] published comprehensive guidelines for hand hygiene in health care settings in 2009. The WHO promotes use of alcohol-based handrub, education, written reminders and audit with performance feedback. Support from the hospital hierarchy is considered important.

Grayson et al describe how a campaign based on the WHO guidelines has been embedded into the national system for accrediting public and private hospitals throughout Australia and its impact on healthcare-associated *Staphylococcus aureus* bloodstream infections. As the authors point out, it is the first national study to show such a strong association between hand hygiene compliance and decreased *S. aureus* bloodstream infection rates. For every 10% increase in compliance there was an impressive 15% reduction in infection, representing the most persuasive evidence of the effectiveness of hand hygiene currently available. The paper is timely. Despite its importance, existing evidence of the effectiveness of hand hygiene is weak. A recently updated Cochrane systematic review [2] concluded that a range of single intervention and combined strategies to increase hand hygiene compliance, many based on WHO guidelines [1] resulted in improvement but increases were often modest and quality of the evidence is low or moderate. Moreover it is not clear which types of interventions are most effective. A surprising number of authors do not report impact on infection rates, many research teams apparently regarding hand hygiene as a 'good thing' irrespective of any evidence of better patient safety [3]. In the Cochrane review [2] only nine of the 26 included publications reported microbiological outcomes.

Over the years a great deal of energy has been invested in establishing why hand hygiene compliance is poor. Early publications were based on supposition [4]. Theories from health psychology and health education were later suggested as barriers to compliance [5] or taken as the conceptual frameworks to underpin empirical studies [6, 7]. More recently there has been a drive to develop theory

to explain poor compliance at the level of the individual health worker [8]. But as early writers pointed out [9] and still emphasised by the WHO, securing and maintaining compliance is about much more than changing individual behaviour: cultural change is necessary throughout organisations. Grayson and colleagues have now demonstrated the importance of major, ongoing organisational change with managerial support to ensure success.

The Australian campaign is not the only large scale hand hygiene initiative ever undertaken. Other big campaigns have been implemented throughout scattered rural hospitals in the US [10] and large chains of acute hospitals [11]. Their outcomes are less persuasive, however. They are not always well reported and findings lack applicability and transferability to other settings because the intervention is seldom described in detail. Devolved to local staff, interventions and approaches to implementation differ between clinical settings and may 'drift' over time. In contrast, Grayson and colleagues achieved a standardised approach which they describe in sufficient detail for replication. Audit was based on direct observation with inbuilt quality control and undertaken by specially trained personnel. Although resource-intensive and time consuming, direct observation is widely regarded as the 'gold standard' hand hygiene audit method. It is the only approach that can detect all hand hygiene opportunities, number of times an opportunity is accepted and appropriate timing of hand hygiene in the sequence of care, enabling auditors to intervene when practice is sub-optimal, thus promoting 'real time' improvement [12]. Creating a national database to document compliance and link the data to the existing national Australian public health database of nosocomial infection further demonstrates the level of organisational sophistication underpinning the campaign.

Overall the campaign described by Grayson and colleagues is the most comprehensive and well described so far. Its uniqueness lies in its size, scope, clarity and detailed reporting. It fills an important gap in knowledge and contains essential messages for any government or organisation intending to establish long term, large scale initiatives to improve hand hygiene compliance and prevent infection.

707 words

## References - GET IN JOURNAL STYLE

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