Patient perspective: is hand hygiene really the most important thing we do?

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Accepted for publication: 24 December 2013

Hand hygiene is widely regarded as the most effective means of preventing healthcare associated infection (HCAI). How often I've said it! So have lots of other people and we all want it to be true. Compared to many other infection and prevention control precautions, cleansing hands is low-tech and inexpensive. But in my most reflective moments, I've sometimes wondered what the hand hygiene mantra really means. Does it imply that hand hygiene is more effective than any of the other infection prevention and control procedures we adopt? Or does it mean that hand hygiene is the most effective infection prevention and control activity that we can do as **individual health professionals**?

I started to think about hand hygiene over 20 years ago. Long before it caught the imagination of policy-makers and opinion leaders, I chose hand hygiene as the topic of my doctoral dissertation. From clinical experience as an infection control nurse, I knew that compliance by frontline staff was often poor and I wanted to study it in detail, because at the time, few other people had. I wrote my thesis, published the results (Gould, 1994) and, still convinced that hand hygiene could reduce HCAI, I conducted an intervention study to encourage nurses to cleanse their hands more often, at more appropriate times and with better technique (Gould and Chamberlain, 1997). Ten years and a Cochrane systematic review later (Gould et al, 2008) I was a bit less sanguine about the evidence base underpinning hand hygiene.

The original review, published in 2008, evaluated 49 attempts to improve hand hygiene compliance. Most studies managed to increase frequency short-term, but few documented infection rates. Poor quality was a major drawback: none of the studies was adequately controlled. Thus, evidence that the intervention had actually improved compliance rather than some other variable that had not been taken into account remained unconvincing. Worst of all there was no real evidence that any improvement in hand hygiene had also reduced HCAI.

Two years later 84 additional intervention studies had been published (Gould et al, 2010). Their quality was better and infection rates were more often documented. This time there was some evidence that cleansing hands could reduce HCAI, but except for two of the new papers, evidence was still not very persuasive.

More than 100 new hand hygiene intervention studies have been published since 2010, but the world will have to wait a little longer for the second updated systematic review. Progress has been interrupted while I considered hand hygiene from a rather different perspective.

Three years ago I noticed a pain running down the front of my left leg. It was annoying rather than upsetting and as it didn't seem to be related to anything in particular, I assumed that I had a minor sports injury. But the pain didn't resolve and although the physiotherapist seemed confident that she could treat it, her efforts were in vain. In fact the pain became more localised and much more pronounced. Following the ministrations of two more physios, the cause was established. I had osteoarthritis. Its progress was rapid and relentless. Soon the pain settled deep in the joint, clearly related to movement. Arthroplasty was inevitable, the sooner the better.

I invested considerable time in finding a suitable surgeon and venue, paying particular attention to track-record in terms of infection rates for the former and standards of cleanliness throughout the latter. Having made my selection I decided that to conceal my research and teaching interests from the surgeon would be deceitful, so at our first encounter, I made sure the *Journal of Infection Control* was tucked under my arm. I guided discussion in the direction of surgical risks, with a focus on infection, and a date for surgery was set.

The numerous intravenous lines came down early on the first post-operative morning and after that virtually all physical contact that I had with staff of any grade was superficial and for the most part brief. The surgeon made much of cleansing his hands when he entered the room. Nobody else did. They cleansed their hands only before and after high risk procedures and I was surprised at how unconcerned I felt about it.

There are times when hand hygiene is of enormous importance and it is always reassuring to see it performed, but for somebody who is no longer at immediate risk of infection (wound occluded, no indwelling devices and with underlying good health), how important is it compared to other infection prevention and control activities? For someone in my position (a very common one, because total hip replacement is a routine operation), should hand

hygiene after brief, superficial contact be considered more important than surgical hand preparation before the procedure? Was it more important than correct maintenance of the operating suite and management of its air exchanges and air flow? Was hand hygiene more important than the application of a sterile dressing to the newly created wound? Was the act of cleansing hands before and after leaving my room simply to record vital signs more important than sterility of the equipment used in theatre? Was hand hygiene before and after a quick contact likely to reduce the risk of infection more than maintenance of the hydrotherapy pool that I used twice during my three day hospital stay? Most of these are team activities, so perhaps what we are really saying is that hand hygiene is the most effective infection prevention and control activity that we can do as *individual health professionals* and should form part of any infection control programme, but it is not more important than any other intervention under all possible circumstances, for all possible patients.

If hand hygiene is the *most effective infection prevention and control activity that we can contribute as individuals*, this implies that each health worker should be accountable for his or her own practice and that it should be audited, the same as other infection control interventions. But how much control of their own hand hygiene practice do individuals have?

In one respect health workers should be in a much stronger position to accept such responsibility than in 1990 when I stepped out with my data collection sheet for the first time. The most striking finding from my original study was the clear association between poor availability of consumables and low frequency of hand hygiene (Gould, 1994). Shortages were commonplace in those long-ago days when infection control was still accorded Cinderella status. Today the much increased availability of consumables, especially alcohol-based products, has revolutionised health workers' ability to cleanse hands quickly, just as much as improved training has ensured that they know how important hand hygiene is. However, I also found that hand hygiene performance was clearly related to workload: as they became very busy, nurses' levels of hand hygiene compliance declined. Today, patient acuity is greater, throughput is faster and nursing numbers have declined compared to 1990. Given this toxic combination, it is still likely that there are many occasions when health workers struggle to cleanse hands as often as they should: without constant reminders and updating, levels of compliance are still not easy to maintain.

If we accept that hand hygiene is highly desirable despite its shaky evidence base and the fact that people may not always be in a position to take full control of their practice, why has this single procedure been selected for greater scrutiny and more heated debate than any other single infection prevention and control activity? Perhaps it is because monitoring hand hygiene appears straightforward. But in reality high quality hand hygiene audit is a skilful, incredibly complex activity and there are so many pitfalls for the unwary related to interpretation of the data, accuracy and completeness. Awareness of the importance attached to hand hygiene has reached every health worker in the land and the presence of an observer will inevitably change behaviour. We hope to boost compliance through performance feedback, but observation can cause quite a different reaction. How many times have nurses postponed a complex aseptic procedure until the audit team has collected their clipboards and left the ward? Patient privacy and dignity are compromised if auditors continue their activities behind bedside curtains, but unless they do, key information is lost because of the many hand hygiene opportunities presented during intra-patient episodes of care. Training to perform hand hygiene audit needs to be undertaken to a high standard, validated and periodically

revalidated to ensure accurate results comparable over time. How often is this achieved?

I was disappointed not to have the opportunity to witness hand hygiene audit during my brief inpatient career, but I don't think I would have wanted to participate in one of those schemes where patients are encouraged to remind staff to cleanse hands. I certainly would not have wanted to assume the role of patient as hand hygiene auditor that has been attempted in some recent studies. Apart from anything else, my time was already occupied. Being a patient is not a passive activity. Every movement has to be planned because it will hurt. Managing to walk and climb stairs is tricky, painful and physically exhausting, especially in the wake of painful, sleep-deprived nights over a period of months. Then there was a queue of visitors more fascinated by the opportunity to see the hospital (which recently had been in the news) than to see me in it. No, no I wouldn't have wanted the responsibility of reminding or auditing anybody, especially if it had ramifications for their employment security and because I expect the hospital management to do that as part of its patient services anyway.

If hand hygiene is the most effective infection prevention and control activity of individual health professionals and they are held to account for their own practice, audit results that suggest poor practice could and should lead to investigation, correction and possibly withdrawal of employment. Now fully recovered and back at the treadmill (the one in my office as well as the one in the gym), I am addressing the second Cochrane update with renewed vigour. Although far too many poor and inconclusive studies are still being published, the quality of the better ones has improved. There are more randomised controlled trials and for the first time there may be sound evidence that improved hand hygiene can contribute to reduction in HCAI. But something else has changed too. Where once the intervention intended to encourage staff to cleanse hands was no more contentious than training and the introduction of a new product, a punitive element is now evident. Verbal reminders and reprimands, even 'violation letters' are used. Managers will have to be very sure of their grounds to use these because health workers could argue that irrespective of issues relating to the evidence base or individual accountability, the audit process used to assess their practice was flawed and its findings inaccurate. Staff who feel threatened and insecure will not give their best. They may no longer want to work in the health economy, paving the way for further reduction in nursing numbers, increased workload for those remaining ... or 'gaming' will be encouraged, where auditors and auditees collude to hide practice that falls short of the mark to meet the needs of NHS trust boards.

Rehabilitation from orthopaedic surgery has the same advantages as a sabbatical but none of the drawbacks: the luxury of time to think without having to write a report to demonstrate what has been achieved. I spent mine pondering on the meaning of the hand hygiene mantra, which in turn prompted reflection on the future of hand hygiene audit and its place in quality control from the angle of the service user. Now I am wondering if the performance of the hand hygiene auditor requires periodic audit too?

I came up with a new idea for practice and research – auditing the work of hand hygiene auditors to add to the targets of the target-driven healthcare world.

Declaration of conflicting interest

The author declares that there is no conflict of interest.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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