

Hand hygiene compliance: the elephant in the room

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Abstract. *Introduction:* Hand hygiene compliance rates for medical staff are consistently lower than those for nurses. Strong leadership to improve compliance has been repeatedly called for, but studies exploring medical staff leadership influence are limited. The qualitative study reported here aimed to explore the perceptions that medical staff have of their clinical leaders and the extent to which they influence hand hygiene practice in their clinical units, and to compare this with unit specific compliance data.

Method: Thirty junior doctors from a major tertiary hospital were interviewed or surveyed to uncover their perceptions of clinical leadership and its influence on hand hygiene behaviours. Compliance data for their clinical areas for the corresponding period was obtained and compared with their views on the influence of leadership on hand hygiene behaviour.

Findings: Consultants, rather than infection control nurses, were seen to have the most influence over medical hand hygiene practices. The unit that scored the best on compliance was also the one where the consultant was perceived to have the most influence.

Conclusion: Junior medical staff know that hand hygiene is important but the extent to which they comply with it depends on the influence of the consultant. Infection control staff need to engage consultants in order to improve medical compliance rates, rather than directing their efforts to medical staff in general.

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Introduction

A comprehensive evaluation of the Australian Hand Hygiene Initiative found that medical staff compliance lags well behind that of nurses and called for further investigation of why this might be the case.¹ In excess of 500 hospitals were audited as part of this initiative and compliance amongst nursing staff was 73.6% compared with 52.3% for medical staff. In any other area of clinical practice, this variation in practice would attract significant interest. Doctors' performance is rarely discussed in the infection control literature other than through calls for 'strong leadership'^{2–6}. Responses to the questions raised by Grayson and Russo and colleagues are long overdue.

A major review of the literature addressing hand hygiene compliance in general, rather than specifically by doctors, concluded that there were few observational studies on what leaders actually do to improve compliance.⁷ One US study did specify that successful medical leaders improved hand hygiene compliance through developing a vision, being

solution-oriented, inspiring and strategic.⁸ This sounds very appealing in principle and isolation but possibly difficult to implement in practice and reality, but other than this study, we have been unable to locate literature that specifically addresses what typical medical leaders are doing about this very poor rate of hand hygiene compliance. For example, in a very recent survey on the barriers to the use of alcohol rubs in a multi-site health facility in Melbourne, the response rate from medical staff was only 5.5% and none attended the subsequent focus groups on the issue.⁹ One nurse interviewed for this study remarked that 'I can't see orthopods [orthopaedic surgeons] using it for joint replacements or straying from their traditional practice.'⁹ No further information or opinions on medical-staff compliance factors were mentioned in this paper.

The study reported here aimed to explore the perceptions medical staff had of their clinical leaders and the extent to which they influenced hand hygiene practice in their clinical units, and to compare this with unit-specific compliance data.

Implications

- Medical staff hand hygiene compliance is generally very poor and this is associated with the extent to which consultants are perceived to have a positive influence over it.
- To improve medical compliance, consultants need to be engaged.
- Infection control nurses may not be the most appropriate people to secure this engagement.

Methods

The research team approached a tertiary-level hospital conducting audits of hand hygiene compliance across clinical units in late 2011 with the aim of seeking the views of residents and interns from four of these units on clinical leadership and hand hygiene.

The audit follows the procedure recommended by the Australian Hand Hygiene Initiative which is in turn based on the World Health Organisation standard.^{10,11} Trained auditors monitor compliance with the '5 Moments' of hand hygiene via covert observation and recording (on either hard copy forms or electronically) at each of the relevant 'moments'. The audit data collected consists of the total number of observed moments when hand hygiene should occur and the number of these during which it was performed correctly, as well as the professional role of the person performing it and whether or not gloves were being worn at the time. During the audit period in question, an average of 350 'moments' in each clinical unit were observed and compliance or otherwise noted.

The units selected for our study were being audited during the same period and were all high-level care general wards, were 'high risk' in terms of infection control and thus had similar access to hand hygiene products and facilities, and had broadly similar levels of patient acuity.

Medical staff were either interviewed or surveyed electronically and asked:

- (1) Who do you see as the clinical leader in your unit, and keeping this person in mind,
- (2) Can you tell me to what extent do you think that this leader influences hand hygiene compliance on the unit?

Respondents nominated who they perceived to be the clinical leader by specifying the role that this person performed e.g. consultant, registrar. The second part of the question required them to choose a response between 1 ('Not a lot') and 5 ('A lot') on the leader's influence on hand hygiene practice.

Medical staff were approached to participate in the study through a convenience sampling method conducted by one person in the research team who had access to residents and interns on a daily basis. Two members of the team from outside of the institution conducted the interviews during which the responses to the questions were recorded on a questionnaire.

Table 1. Responses to 'Who do you see as the clinical leader on this unit?'

Perceived leader	% (n) responses
Consultant	80% (24)
Senior registrar	3.2% (1)
Registrar	13% (4)
Nurse unit manager	3.5% (1)

Table 2. Influence of perceived leader on hand hygiene (on a Likert scale of 1 'Not a lot' to 5 'A lot')

Role	Extent to which HH influenced by this leader
Consultant	3.17
Senior registrar	3.00
Registrar	4.00
Nurse unit manager	0

All interviews were tape-recorded and transcribed and all team members analysed the content individually as well as reviewed collectively. The questionnaire was subsequently sent to 40 staff using the Survey Monkey tool and responses were collated electronically and distributed to the research team members. Ethics approval was obtained through the Tasmanian Health and Medical Research Ethics Committee.

Hand hygiene compliance data was then accessed for the period during which the medical staff were working in the unit for each of these four clinical units.

Results

Twelve staff were interviewed and 18 responses to the survey were received which represented a response rate of 45% (staff were approached for either interview or survey, but not both). Hand hygiene audit compliance data for the relevant period was obtained for four units.

Clinical leaders

The majority of medical staff regarded the Consultant as the clinical leader of the unit. The responses to this question are summarised in Table 1.

Influence of leader on hand hygiene compliance

The mean scores of the responses to the question on perceived influence on hand hygiene for each role are shown in Table 2 below.

Hand hygiene unit compliance data, clinical leader and their influence

The compliance data for each clinical unit and the perceptions of consultant's degree of influence over hand hygiene compliance is shown in Table 3 below.

Discussion

Not surprisingly consultants are seen by most medical staff as the unit's clinical leader (Table 1). The question about their

Table 3. Hand hygiene compliance, consultant leader and influence

Unit	Hand hygiene compliance	% (<i>n</i>) of respondents nominating consultant as the leader	Mean influence score and 95% confidence interval
Unit A	73.1	75% (6)	3.67 ± 1.10
Unit B	66.2	100% (7)	2.57 ± 1.12
Unit C	64.3	66% (6)	3.33 ± 1.10
Unit D	53.8	83% (5)	3.20 ± 1.44

influence over hand hygiene compliance was interpreted by respondents as referring to **positive** influence. Consultants were not perceived as exercising very much of this influence over hand hygiene compliance with an average score of 3.17 out of 5 on this dimension (see Table 2). (Registrars seem to be doing slightly better with an average score of 4.) The unit where 100% of respondents saw the consultant as the clinical leader (Unit B) also had the poorest score in terms of perceived influence of the consultant over compliance, although this lack of influence did not seem to affect their hand hygiene compliance relative to the other units (See Table 3). This possibly could be explained by the high acuity factor of patients in this particular ward, better access to hand hygiene facilities or other factors. It should also be noted that, although the distribution of scores at the unit level were checked for distribution normality and confidence levels were calculated, the sample size of respondents at the unit level was too small to be able to draw firm quantitative conclusions.

Unit A, which had the best compliance score, was the one where perceptions of the consultant's influence over this was the greatest (See Table 3). One respondent from an outpatients area of the unit nominated the Nurse Unit Manager as the leader and rated her influence over hand hygiene compliance as zero (see Table 2).

The study raises some interesting qualitative questions about what clinical leaders are doing, or rather not doing, about hand hygiene even if the low number of respondents makes it difficult to draw firm quantitative conclusions. The qualitative data obtained during the interviews provided some information which can inform further study. Most interviewees felt that hand hygiene was not particularly emphasised by their medical leaders:

'I don't remember her [the consultant] being bad at it, but I don't remember her being great at it either. It is not something that has really popped out at me. I don't remember her religiously washing her hands after a consult.' Interviewee 4

'Nope. [in response to question about whether the consultant influenced hand hygiene.] Can't imagine that they would have. I saw them wash their hands, most of the time? Yeah. But I can't say that they motivated me to. They weren't like some of the other doctors that I've been with that will make a display of it. . . They didn't pooh pooh it or anything, like some people talk 'hand hygiene hah hah, yeah hah hah' . . . they weren't like

that. But I can't say that I've noticed one way or the other.' Interviewee 5.

Several interviewees referred to nurses' role in hand hygiene compliance:

'Nursing staff see something, and they don't care who it is either, whether it's a consultant, registrar or whoever . . . and they will tell you. A lot of the time we [the medical staff] don't even see it, for example the other registrar will just blatantly ignore it and walk straight into the infection control room [sic] without gowning up. That happens a lot across the board in just about every single ward that you go into.' Interviewee 9

'I think the nursing staff are the group of people who carry most of that [compliance monitoring].' Interviewee 11.

It was apparent, though, that medical staff based their behaviour on what they saw their clinical leader doing, not on what the nurses were doing or saying about hand hygiene:

'He leads by example. He washes his hands before and after seeing every patient, and even though he doesn't say anything, it is very clear that he expects everyone in the team to do the same.' Interviewee 6.

Respondents' comments revealed that low compliance amongst medical staff seemed to be the result of poor role modelling by consultants, which may explain why only a modest overall (3.17 mean score) perception of their level of positive influence over hand hygiene was obtained.

It could be argued that one of the limitations of this study is that we use overall unit compliance data and link this to medical staff perceptions of clinical leadership, rather than linking medical staff perceptions to medical staff only compliance. The units considered for this study, however, were broadly team-focussed, integrated clinical areas and we made the assumption that accountability for the clinical performance of the unit across all dimensions was ultimately that of the senior medical staff involved, in conjunction, of course, with nursing. The argument that our assumption is a limitation to the study does indeed raise some important questions, however, in regard to the whole issue of accountability in health services for hand hygiene compliance and how improving it is approached. Our findings indicate that medical staff perceive that hand hygiene, though perhaps important, is 'nursing business' unless their leaders specifically make it otherwise. If hand hygiene compliance strategies such as training, audit and publication of results, and other initiatives developed by hand hygiene experts fail to recognise or confront this particular 'elephant', then nursing leadership will continue to exert their influence on compliance, but overall unacceptable final outcomes in rates of health facility-acquired infections may persist.

Conclusion

Unarguably, infection control specialists are doing their utmost to get the hand hygiene message across, but it also

seems without dispute that they alone are unable to have the influence and impact that is needed on the hand hygiene behaviour of doctors. This study indicates that the influence of the consultant is critical in determining where hand hygiene appears on the, largely unspoken, agenda about what is important and what can be left to others to worry about. One encouraging finding was that the ward where the consultant was perceived to have the most influence over hand hygiene was also the one that achieved the best performance in the compliance audit.

Engaging consultants in improving infection control through better hand hygiene seems to be a critical factor in increasing medical staff compliance. Successful strategies to engage consultants who are outside of the infection control speciality area in the importance of hand hygiene needs further research and discussion.

Conflict of interest

None.

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References

1. Grayson M, Russo P, Cruickshank M, Bear J, Gee C, Hughes C. Outcomes from the first two years of the Australian National Hand Hygiene Initiative. *Med J Aust* 2011; 195: 615–9. doi:10.5694/mja11.10747
2. Collingnon P, Grayson L, Johnson P. Methicillin-resistant *Staphylococcus aureus* in hospitals: time for a culture change. *Med J Aust* 2007; 187: 4–5.
3. Birk S. Creating a culture of safety: Why CEOs hold the key to improved outcomes. *Health Exec* 2009; 24: 14–20.
4. Goodspeed R. Sentinel Event Alert pairs leadership and safety. *Hosp Infect Control Prevent* 2009; Supplement December.
5. The Joint Commission's Center for Transforming Healthcare. Patient Safety is in your H.A.N.D.S. *Hosp Infect Control Prevent* 2009; Supplement December.
6. Jamal A, O'Grady G, Harnett E, Dalton D, Andresen D. Improving hand hygiene in a paediatric hospital: a multimodal quality improvement approach. *BMJ Quality and Safety* 2012; 21: 171–6. doi:10.1136/bmjqs-2011-000056
7. Ovreteit J. Improvement leaders: what do they and should they do? A summary of a review of research. *BMJ Quality and Safety* 2010; 19: 490–2. doi:10.1136/qshc.2010.041772
8. Saint S, Kowalski C, Banaszak-Holl J, Forman J, Damschroder L, Krein S. The importance of leadership in preventing healthcare-associated infection: results of a multisite qualitative study. *Infect Control Hosp Epidemiol* 2010; 31: 901–7. doi:10.1086/655459
9. Sloane T, Shaban R, Gillespie B. Barriers and enablers to the uptake of alcohol-based hand rubs for pre-operative hand antisepsis in the operating room: an Australian perspective. *Health Infection* 2012; 17: 25–32. doi:10.1071/HI12001
10. Hand Hygiene Australia. Audit tools. Hand Hygiene Australia; 2011. Available from: www.hha.org.au/ForHealthcareWorkers/auditing.aspx [verified 29 March 2013]
11. World Health Organization. Guidelines on Hand Hygiene in Health Care. Geneva: World Health Organization; 2009.