

ciated with removal of 59% of unnecessary catheters. As did a previous study suggesting that physicians were unaware of their patients having urinary catheters,⁴ we found that reminders to physicians with less training who were directly involved in patient care enhanced the effectiveness the reminder systems. We also identified 2 potentially modifiable gaps in knowledge of inappropriate urinary catheter-prescribing behaviors: incontinence without skin breakdown and retained use after monitoring of urine output. Ongoing and future efforts will require an evidence-based educational program of systematic reminders among physicians directly involved in patient care, with emphasis on infection prevention control, patient safety, and institutional support.

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Hierarchy and Hand Hygiene: Would Medical Students Speak Up to Prevent Hospital-Acquired Infection?

To the Editor—Hand hygiene (HH) is important in reducing healthcare-associated infections (HAIs).¹ Despite this, and despite the presence of major HH campaigns, adherence remains low, especially among medical staff.^{2,3}

Teams play an integral role in health care, and effective teamwork is essential for the reduction of medical errors.^{4,5} Vigilance in HH practices from nurses, junior doctors, and physicians may improve adherence; however, the existence of steep hierarchies within the medical profession may prevent junior staff from questioning supervising colleagues.^{6,7}

Medical students are junior members of healthcare teams and have been shown to play important roles in reducing patient harm.⁸ This cross-sectional study assessed the willingness of medical students to speak up about poor HH practices among their colleagues and supervising doctors.

An anonymous survey was administered to Monash University medical students undertaking clinical placement during a 6-week period from January 23 to March 2, 2012. The Monash University Bachelor of Medicine and Surgery program is a 5-year undergraduate course; students are placed full time in a clinical environment for the final 3 years. Southern Health has 2,100 beds spread over 5 major hospitals. Approximately 250 students were placed across these campuses during the study period. Students were provided surveys to complete after they were informed of the nature and purpose of the study.

Survey questions involved demographic information, willingness to remind medical personnel to perform HH, reasons for not speaking up, perceived reactions of medical personnel and the individual student to being reminded to perform HH, and students' beliefs about their role in preventing HAIs and the importance of HH. Data were analyzed using Stata 12 (StataCorp). Comparisons were made using a χ^2 test where appropriate. All data were de-identified. The Southern Health Human Research Ethics Committee approved this study as quality research.

A total of 209 students (84%) participated in the study (82 third-year [38%], 64 fourth-year [31%], and 63 fifth-year students [31%]). Of these, 96% were younger than 25 years of age, 51% were male, and 53% were Australian born. Of those born overseas, 21% were from Malaysia or Singapore. A total of 83% were willing to speak up to fellow students about inadequate HH; however, this number decreased in a stepwise fashion for those who were willing to do so to interns (30%), residents (16%), registrars (9%), and consultants (6%). Female students were more likely to speak up to fellow medical students than were their male counterparts ($P = .024$). There were no differences observed for medical year

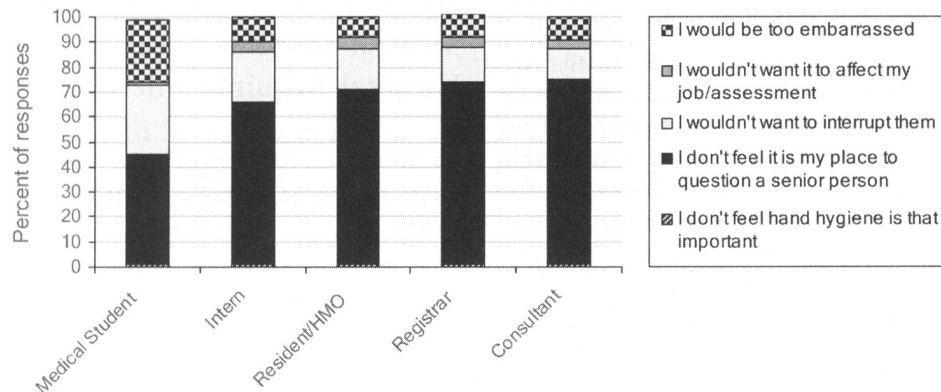


FIGURE 1. Reasons medical students do not question inadequate hand hygiene among medical staff.

or country of birth in terms of students' willingness to speak up.

The primary reason why students would not speak up was a reluctance to question senior staff (from 64% for interns to 74% for consultants), as illustrated in Figure 1. This was followed by an unwillingness to interrupt (from 28% to 12%) and embarrassment (from 25% to 9%). Only 5% of students were concerned about how their actions might affect future job assessments.

When questioned about how they perceived that medical staff might react to being reminded to perform HH, 44% believed that medical students would be thankful and the majority thought other medical staff would be annoyed or irritated (37%, 51%, 65%, and 68% for interns, residents, registrars, and consultants, respectively). The majority reported they would be thankful if a fellow medical student (69%), intern (65%), or resident (56%) asked them to perform HH, and students reported that they would feel embarrassed if asked to do so by a registrar or consultant (44% and 48%, respectively). Almost all (99%) of the students believed HH was important or very important in reducing HAIs, and 74% believed that they had an important role in preventing HAI.

This study found that medical students were willing to speak up to fellow students regarding inappropriate HH; however, this willingness decreased with individuals who were further up the medical hierarchy. This reticence occurred despite an almost universal appreciation for the importance of HH in the prevention of HAIs.

Previous research has identified that national values may be less important than organizational culture when encouraging medical students to speak up.⁷ Hierarchical culture leads to a fear of disclosing mistakes because of perceived poor assessments and decreased opportunities for employment.⁶ This issue must be addressed to ensure a reduction in preventable medical errors, including the prevention of HAIs through appropriate HH practices.

The aviation industry, which also requires effective team-

work in high-pressure situations, has introduced crew resource management to modify attitudes toward junior members in the cockpit, thus allowing prompt discussion of potential errors irrespective of experience.⁹ Lessons should be learned from aviation so that similar outcomes can be realized in the healthcare system.

The Lucian Leape Institute has argued for urgent reform in medical education through the creation of learning cultures that help students acquire not only core medical knowledge and clinical skills but also the attitudes and behaviors that allow them to function safely in clinical settings.¹⁰ For patient safety, in addition to educating students about appropriate practice, training could incorporate communication skills that will allow them to respectfully question authority when it is appropriate.

The primary limitations of this study are the inclusion of students from 1 medical school and the use of self-reported surveys. Therefore, the results may reflect assumed behavior rather than actual occurrences. Further studies are required that would put empowered students in the position to question seniors.

In conclusion, our study has demonstrated the unwillingness of medical students to speak up to senior staff regarding inappropriate HH. The hierarchical culture within the healthcare setting must be addressed to ensure that an equal voice is given to all members of the treating team, so that the best outcomes in patient care are achieved.

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