



## One moment doctor! Have you forgotten hand hygiene?

Hospital infection prevention indices are improving, but reducing infection rates further requires professional culture change

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The “Five Moments For Hand Hygiene”<sup>1</sup> promoted by the World Health Organization are logical and uncomplicated, but some health care workers nevertheless find them confusing. Nurses are more likely to understand the five moments because of repeated exposure to them — during in-service training and regular review of ward audit results — but doctors often avoid these opportunities, because of more pressing and important commitments. Unfortunately, attempts to simplify can increase the confusion; for example, the hand hygiene policy of the New South Wales health department, which merges moments

4 (after any non-procedural contact with a patient) and 5 (after contact with a patient’s surroundings),<sup>2</sup> conflicts with the requirement to audit all five moments separately.

Doctors have consistently been reported to be less compliant with hand hygiene practices than nurses.<sup>3,4</sup> The latest Australian hand hygiene audit data, for the third period in 2013,<sup>5</sup> show that average compliance rates of doctors and nurses were 66% and 83%, respectively. Despite improvement since the National Hand Hygiene Initiative began in 2009 (from 46% and 68%, respectively), the gap remains. The analysis of recent hand hygiene data by Azim and

colleagues in this issue of the Journal shows that these differences are obscured, and the estimated overall compliance inflated by differential sampling of audited moments between doctors and nurses.<sup>6</sup> Doctors' relatively poor compliance is important because, although doctors have fewer total patient contacts than nurses, they see more individual patients and perform most invasive procedures, providing relatively more opportunities for transmission of pathogens.<sup>7</sup> Also, doctors have influential positions in hospitals and their attitudes and behaviour disproportionately influence those of other staff.<sup>8</sup>

Focus-group studies have highlighted differences in attitudes to hand hygiene between medical and non-medical hospital staff.<sup>8,9</sup> Non-medical staff often noticed the hand hygiene practices of others, and most believed that doctors' practices were relatively poor. However, doctors and medical students noticed only their senior colleagues' practices, which strongly influenced their own. Doctors were sceptical of hand hygiene guidelines and often discounted the need for hand hygiene before patient contact; many believed hand hygiene could interfere with patient care. They also reasoned that, if hand hygiene were important, it would have dedicated funding.<sup>9</sup> In another study doctors, unlike nurses, believed that hand hygiene was ineffective in preventing cross-infection and were largely motivated by self-protection.<sup>10</sup>

Doctors' observed and self-reported adherence to hand hygiene can vary within the same organisation, for example from more than 80% among physicians and paediatricians to around 30% among surgeons and anaesthetists.<sup>3</sup> Compliance also varies with thinking style, correlating with so-called experiential/automated thinking, which is more common among nurses than medical consultants (who are more likely to display rational/deliberative thinking).<sup>11,12</sup> Compliance was also negatively correlated with educational level, being lower among senior doctors than among nurses, medical students and residents.<sup>13</sup>

Relatively poor compliance with Moment 1 of the five moments (before touching a patient) has been documented previously,<sup>4</sup> and explained by an inherent tendency of people in general to practice hand hygiene when they perceive their hands to be "emotionally dirty" — after touching patients — rather than electively to protect others.<sup>14</sup> As shown by Azim and colleagues, the current reporting of "average" hand hygiene compliance data hides this poor compliance with the hand hygiene moment that is most important for patient protection (before touching a patient). The belief often expressed by doctors, that hand hygiene "between patients" (meaning after the last one) is sufficient, ignores the inevitability of touching potentially contaminated objects like patient notes, bed curtains, door handles, mobile phones, and computer keyboards between patients.

Considering the distortions introduced by averaging hand hygiene compliance across the five moments and differential auditing and compliance between professional groups, the weak correlation between hand hygiene and *Staphylococcus aureus* bloodstream infection (SABSI) rates is unsurprising. Health care-associated SABSIs are not one, but at least four separate entities — onset in inpatients

versus outpatients and infection with *S. aureus* resistant or susceptible to methicillin. The relative importance of various risk factors to these four entities — including hand hygiene, invasive devices, antibiotic use and environmental hygiene — may differ. Prevention of health care-associated SABSIs requires a better understanding of the epidemiology of each of these entities separately. Ideally, to reduce the morbidity and mortality from these often preventable infections, surveillance should encompass all SABSIs, including those acquired in private hospitals and in the community.<sup>15</sup>

Meanwhile, despite improvements in hand hygiene in public hospitals, compliance is still suboptimal and the current auditing regimen required by Hand Hygiene Australia imposes a burden on hospital staff that is difficult to maintain. Targeted auditing of Moment 1 (before touching a patient), medical staff and specific units, and asking auditors to engage directly with staff, as suggested by Azim and colleagues, would certainly reduce the workload. However, past experience suggests that achieving sustained behaviour change will be more difficult. More collaborative, inclusive approaches to preventing infection, based on better understanding of the psychological, social, cultural and professional factors that contribute to poor compliance with patient safety programs in general, are needed.

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