COMMENTARY

Speaking Up: The Next Step to Improving Health Care Worker Hand Hygiene

W. Matthew Linam, MD, MS

Since Ignaz Semmelweis recognized hand hygiene as a key behavior to prevent health care–associated infections, health care workers (HCWs) have struggled to listen to and act on this seemingly simple advice. Despite this knowledge, HCW hand hygiene remains poor, ∼40% nationally.[1] The hand hygiene behavior of HCWs is significantly influenced by long-standing habits, which are often difficult to change. This difficulty contributes to the challenges hospitals have faced trying to sustainably improve HCW hand hygiene. Multiple studies reinforce the need for a multimodal approach to improve hand hygiene.[1–3] The World Health Organization recommends a combination of interventions: an institutional focus on hand hygiene, education and training, supply availability, workplace reminders, and feedback of compliance data.[1] Hospitals that have implemented a similar bundle of interventions have seen HCW hand hygiene improve, but compliance usually plateaus at <90%.[1] These types of interventions work to develop and implement a standardized process, but they will improve process reliability only to ∼80% to 90%. Different types of interventions are needed to improve hand hygiene to >90%.[4]

In the recent quality improvement (QI) initiative by McLean et al,[5] the goal was to improve HCW hand hygiene to ≥95% by using high-reliability concepts. This was a time series QI study implemented on 2 pediatric medical surgical units within a large academic medical center. Hand hygiene compliance was defined as correct hand hygiene before and after the HCW entered the patient's room. Hand hygiene compliance data were collected by covert direct observation. The multidisciplinary team used baseline data to identify the following key drivers associated with improving the outcome: leadership commitment, supply availability, HCW knowledge, real-time identification of noncompliance, and ensuring that hand hygiene compliance was the social norm. QI science methods were used to test changes. Interventions designed to increase hand hygiene to ≥95% were chosen based on reliability science principles and included a redundant hand hygiene restocking process, a hand hygiene champion program to mitigate hand hygiene failures, and empowering patients and families to remind HCWs to perform hand hygiene. The relationship between interventions and the change in HCW hand hygiene compliance over time was displayed on an annotated statistical process control chart (p-chart). The average baseline HCW hand hygiene compliance was 87%. After implementation of the high-reliability interventions, compliance increased to ≥95% on both units and has been sustained for >2 years.

Although this was a well-designed QI initiative to improve HCW hand hygiene, two important limitations should be discussed because they may affect interpretation of the results. First, there was limited explanation of how the covert direct observations were performed. Studies have shown that hand hygiene data can be significantly affected by the Hawthorne effect and observation bias, which can falsely elevate compliance data.[6,7] Because most observation programs collect data only on 1% to 2% of hand hygiene opportunities, the data collected may not accurately reflect true compliance.[8] Second, there was no measurement of how frequently hand hygiene champions, patients, and families reminded HCWs to perform hand hygiene. Speaking up to prevent witnessed errors is challenging, and HCWs and families

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often report remaining silent instead of intervening despite recognizing the benefit.[9] Without measuring the frequency of speaking up, it is difficult to assess the true effect speaking up had on hand hygiene compliance and whether the interventions were sustained.

Multiple barriers prevent HCWs from performing hand hygiene, such as lack of knowledge of how and when to perform hand hygiene, hand hygiene supplies that are either unavailable or not easily accessible, HCW forgetfulness, and a perceived lack of time to perform hand hygiene.[1] Evidence-based intervention bundles address many of these barriers. Unfortunately, the long-standing habits of HCWs create a culture that lacks the social expectation to perform hand hygiene consistently, as recommended by guidelines. Despite education, training, easy access to supplies, reminder signs, and awareness campaigns, HCWs can still choose to not perform hand hygiene.

The failure of HCWs to follow standard practices, whether accidental or intentional, limits the ability of a process to function consistently as intended. Reliability science provides insight into the type of interventions needed to achieve different levels of process reliability.[4] To improve process reliability to ~95%, human factors engineering principles are used to design interventions that identify potential failures and mitigate them before they can cause harm. Examples of interventions that can achieve this level of reliability include required checklists to make sure all process steps are followed, intentional redundancy to ensure that a key task is performed, making the desired action the default action, and scheduling key tasks.[4] Another example is a process in which an HCW identifies an error being caused by another HCW before it reaches the patient and intervenes, often by speaking up, and prevents the error from occurring.

Like the improvement initiative by McLean et al,[5] other published studies have empowered HCWs, patients, and families to speak up and remind HCWs to preform hand hygiene. In settings where speaking-up interventions have been implemented, HCW hand hygiene compliance is often sustained at >90%.[2,3] Although speaking up is designed to identify failures and mitigate them before they cause harm, it may not actually function like a true high-reliability intervention. There are probably many hand hygiene failures that go unwitnessed, and because speaking up to a colleague is often difficult, observed failures often are not prevented.[9] At best, speaking up by HCWs and families is inconsistent, but that does not mean these interventions are ineffective. Speaking-up interventions, such as those implemented by McLean et al,[5] specifically address HCW behavior at the individual level. It is not enough to tell people what the expected behavior is and provide data describing the hand hygiene compliance of the group. There must also be social pressure by leaders and peers to perform the expected behavior.[10] Speaking up, even if not consistent, creates that social pressure. When social pressure is combined with other interventions, consistent hand hygiene becomes the social norm. Once established, social norms are difficult to change.[10]

After >150 years, hospitals continue to struggle to get HCWs to perform hand hygiene consistently. Despite continued challenges, much has been learned about what drives hand hygiene behavior and evidence-based interventions that can result in improvement. Bundles of interventions, such as those recommended by the World Health Organization, are necessary first steps to improving HCW hand hygiene, but their impact is limited because they do not fully alter the habits and culture that drive noncompliance. Interventions designed to encourage HCWs, patients, and families to speak up about witnessed hand hygiene failures can create the social pressure for HCWs to consistently perform hand hygiene. It is time to take the next step in improving HCW hand hygiene by creating systems and a culture that promote speaking up.

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