

**Hand Hygiene Interventions to Improve Long-Term Compliance: Quality Improvement**

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Houser (2023, pp. 13) defines *quality improvement* as "The systematic, data-based monitoring and evaluation of organizational processes with the end goal of continuous improvement." A quality improvement study aims to analyze methods to improve practice within a field. QSEN Institute's (2020) knowledge, skills, and attitudes (KSA) competencies aim at standardizing studies that match Houser's (2023) definition of a quality improvement study. For example, the knowledge competency (QSEN Institute, 2020) focuses on collecting data to be analyzed to show the difference between before the experiment and after; this aligns with Houser's (2023, pp. 13) "data-based monitoring." QSEN Institute's (2020) skills competency emphasizes the need to organize the method of data collection for the reader to follow and ways to measure performance. This competency aligns with Houser's (2023, pp. 13) "organizational processes" part of the quality improvement definition. Lastly, the QSEN Institute's (2020) attitudes competency highlights the need for the study to push for attitudes of participants who want to meet the improvement goal, which meets Houser's (2023, pp. 13) "end goal of continuous improvement" in the definition.

The selected research article (Albert et al., 2019) focuses on compliance with proper hand hygiene (HH), an essential practice for all nurses because it decreases the spread of disease among patients. Proper HH is essential to creating a safer medical environment in hospitals, long-term facilities, and everyday life. Analyzing effective interventions is helpful for other medical facilities to implement to improve staff compliance and technique with HH.

### **Article Summary**

#### **Introduction**

Albert et al. (2019) examined HH compliance over three years with seven interventions in the Medical-Surgical Intensive Care Unit at Boston Children's Hospital. The staff included 150 nurses, six nurse practitioners, and 55 other providers. The interventions used in this study include weekly rounds for patient safety, photos of leadership showing good HH displayed around the unit, identifying HH exemplary employees, showing HH compliance of the unit outside the patient rooms, implementing challenges for HH, administration increase support for increased HH audits, and direct feedback to non-compliant staff members. The baseline compliance rates were 87% overall for all groups of providers, 93% compliance during the study period, and 93% compliance after the study.

HH is vital to preventing the spread of germs and creating new infections in patients. Due to the proximity and density of people in one area, nurses must be vigilant in HH to create a safe patient environment. This study helps other hospitals learn what types of interventions will increase compliance among nursing staff.

### **Overview**

Knowledge is one of the QSEN Institute's (2020) quality improvement competencies. This competency focuses on realizing that nurses and health profession students are vital to improving patient outcomes. The selected article's researchers (Albert et al., 2019) included attending physicians, critical care fellows, pediatric residents, nurse practitioners, and nurses. Using a diverse group of individuals in different job positions shows the importance of all the roles in improving HH in the Intensive Care Unit. Albert et al. (2019) have this type of participant pool, so the article meets the QSEN Institute's (2020) knowledge competency.

Another QSEN Institute (2020) competency, attitudes, includes appreciating the value of care improvement by the individuals and staff. The research team for this article (Albert et al., 2019) used recognition for HH "champions" to help improve compliance. The researchers also recognized exemplary staff members to create a model for the other providers. Spotlighting participants following proper HH allows the participants to feel valued and seen. Recognition of those participating in the study (Albert et al., 2019) abiding by proper HH meets the attitude competency.

Lastly, the QSEN Institute's (2020) skills competency focuses on using organizational methods to measure the participants' performance in improving practices. Albert et al. (2019) used digital screens to show audit results and information about the participants' HH. The research group (Albert et al., 2019) also created a graph in the article to symbolize the trend of adherence to HH with the challenges implemented. These quantitative data analyses and organized graphs indicate that Albert et al. (2019) meet the QUSEN Institute's (2020) skills competency.

### **Quality Improvement**

The implementation of care settings from this research article (Albert et al., 2019) includes conducting HH challenges with rewards. Including challenges with rewards in the hospital helps incentivize employees to perform good-quality, consistent HH.

The hospital should survey the staff on what incentives would work best and collecting money for the incentives would be necessary. During the implementation of challenges, the administration would need to track the progress of each unit or group accurately and advertise

the rewards for the challenges. After the implementation, the hospital should analyze the practicality of the challenges in improving HH compliance.

The suggested change does not have to impact the institution financially, though the institution will need a separate account for this purpose. Perhaps, the hospital allows the staff to donate to a separate account that provides the incentives. This way, the hospital does not have to budget or pull money from other accounts to provide rewards to the staff for the challenges.

Patient satisfaction would go up due to seeing providers doing consistent HH. Nursing satisfaction could go up due to quality prizes from the challenges. Nursing safety would also increase with patient safety due to decreased infection and spread due to HH compliance (Albert et al., 2019).

### **Application to Nursing**

#### **Practice**

HH is most common before and after being with a patient. HH is used to prevent cross-infections and healthcare-associated infections and reduce the spread of antimicrobial resistance (Hillier, 2020). HH is essential in healthcare when one is interacting with many people throughout the day. The World Health Organization (WHO) (World Health Organization [WHO], 2017) has reported that a hospital in a high-income county found an 85% decrease in the number of catheter-associated urinary tract infections. Another hospital from the same WHO study (2017) found an overall decrease in catheter line-associated bloodstream infection rates after implementing a HH action plan.

When performing HH, there are five guidelines that providers, including nurses, should follow "Before touching a patient, before undertaking [an] aseptic procedure, after exposure or risk of exposure to bodily fluids, after touching a patient, and after touching a patient's surroundings" (Hillier, 2020, para. 10). Hillier (2020) adds that gloves do not replace HH, and HH should be followed prior to donning and following doffing gloves. Additionally, while HH includes alcohol-based hand gel, soap with water should be used when hands are visibly soiled, contaminated with bodily fluids, and when caring for patients with *Clostridium difficile* (Hillier, 2020). Soap and water are more effective against rotavirus and norovirus than alcohol-based hand rubs.

When washing with soap and water, the individual will turn on the tap with elbows or foot pedals and check if the water is at a comfortable, warm temperature. Then, soak the hands from the tips of the fingers to the lower forearms. Use one to two applications of soap into the palm and rub the hands together to create a lather. The lather is then rubbed with palms, between fingers, back of hands, under nails, around the thumbs, and on the lower arms before thoroughly rinsing under the water; this should take about 20–30 seconds. Then dry the hands and lower arms with a clean paper towel(s), turn the tap off with the paper towel(s), and throw the paper towel(s) away (World Health Organization [WHO], 2009).

This handwashing method ensures that soap is applied everywhere on the hands and lower arms to reduce the number of microorganisms on the skin. Poor HH execution includes sparse product use and not washing long enough, leading to poor hand decontamination, and poor hand decontamination leads to microbial transfer between patients, increasing the risk of infection (WHO, 2017).

## **Education**

WHO (2017) found that using a multimodal strategy helps increase HH adherence. In other words, using multiple strategies best keeps HH adherence rates up over time. When educating and training employees, the emphasis should be on preventing the spread of microbes among patients to increase HH adherence (WHO, 2017). WHO (2017) also found that using a range of education activities motivates infection prevention and control education and training in health facilities.

## **Research**

Albert et al. (2019) mention that using digital screens to project HH compliance data helped increase HH adherence due to the staff, patients, and families ability to view the data. Albert et al. (2019) discuss the potential for fatigue from the constant display on digital screens. Further research on the data display methods on long-term effects over more than one year will give insight into possible fatigue. Understanding the digital screens and changing how the data is displayed may give more insight into what methods would create the desired outcome.

Both WHO (2017) and Albert et al. (2019) discuss implementing a multimodal approach to increasing HH compliance. Further research on individual approaches will give more knowledge on which approaches work most effectively. Thus, understanding what possible combinations of approaches will yield the best results.

## **Conclusion**

QSEN Institute's (2020) competencies for quality improvement are specifically to ensure a research project meets Houser's (2023) definition of quality improvement, as discussed in the

beginning. The KSA competencies (QSEN, 2020) meet Houser's "organizational processes," "data-based monitoring," and "end goal of continuous improvement" (2023, pp. 13) parts of the definition for quality improvement.

WHO (2017) emphasize heavily how important proper HH is to prevent the spread of disease and cross-contamination between patients. Because nurses work with a multitude of patients per day, one must follow consistent HH before and after interacting with a patient and when hands are visibly soiled (Hillier, 2020). Additionally, the HH skill is one of the first lab skills Lakeview students check off, indicating the importance of the skill in nursing practice.

HH is essential for any person working in a medical facility. Many researchers have emphasized why HH is vital (Albert et al., 2019; Hillier, 2020; WHO, 2009; WHO; 2017), and the WHO (2009) created a standardized HH technique to ensure a proper HH process. Without proper HH, the spread of microbes between patients and workers would be astonishing, increasing the rate of infections and hospital stays. One must keep in mind the significance HH has in preventing illnesses and diseases, even just day to day.

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