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Implementing Hebert's Multimodal Approach to Improve Hand Hygiene Quality: A Position Statement

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Abstract

The health care field is ever growing and changing at rapid speeds. One consistent and important issue in the field circles around infection prevention and control. The paper seeks to highlight issues and trends pertaining to hand hygiene quality improvement. Hand hygiene is key in ensuring the safety and health of both personnel and clients. In addition, it is a key in health promotion and cost saving. The paper advocates for Hebert's Multimodal Approach to improve hand hygiene. This approach will promote good patient care outcomes and quality of work life of health care personnel.

Keywords: hand hygiene, Hebert's multimodal approach, quality improvement, infection prevention, health care.

Introduction

Health care workers know and understand the high relevance of maintaining and promoting hand hygiene as the leading measure to prevent the spread of antimicrobial resistance and prevent the spread of health care-associated infections (Allegranzi, & Pittet, 2009). Lack of hand hygiene creates a dilemma in the health care field in that, an estimated 1.7 million hospital-acquired infections (HAIs) occur annually in the United States, leading to about 99,000 deaths and a financial cost of $28.4 to $33.8 billion in direct medical cost to American hospitals (Scott II, 2009). Within this analysis is an examination of the problem posed by lack of proper hand hygiene and implications that failure to complete can have on patients, an assessment of pertinent data and contributions to the noncompliance of hand hygiene, a plan with various interventions for process improvement, and finally, evaluations for measurable outcomes.

Although health care workers help patients heal through caring hands, it is often these same hands have become the major source for transmitting health care-associated pathogens. Researchers estimate that if all clinicians routinely washed their hands, a million patient deaths in a year could be prevented (Allegranzi, & Pittet, 2009). Appropriate hand washing with soap and water could also reduce diarrheal disease-associated deaths, such as clostridium difficile, by up to

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fifty percent, and can also reduce the risk of respiratory infections by sixteen percent (Allegranzi, & Pittet, 2009). Alongside health care statistics, the use of an alcohol gel hand sanitizer in the classroom provided an overall reduction in student absenteeism due to infection by 19.8% among 16 elementary schools and 6,000 students (Scott II, 2009).

The relevance of this problem lies in that; pathogens on a patient's skin are shed onto surfaces in their surrounding environment. The consequence is that in turn, health care workers then contaminate their hands by touching the environment or patient's skin during routine care, despite glove use. These organisms are able to remain on the health care workers hands for at least several minutes following contamination (Allegranzi, & Pittet, 2009). The problem with lack of suboptimal hand hygiene practices in turn, leads to microbial colonization, thus contributing to unnecessary health care acquired infections. Challenges also remain with hand hygiene compliance, implementation, and adoption of this practice as a standard of care.

Hand hygiene practices and transmission of pathogens

Hand hygiene practices are considered to be the cornerstone of preventing health care associated infections. The importance of these hygiene practices can be found in current health care acquired infections. These potentially life threatening infections include central line associated bloodstream infections (CLABSI), catheter associated urinary tract infections (CAUTI), surgical site infections (SSI), and ventilator-associated pneumonia (VAP). Proper hand hygiene is considered a key element in the recent prevention 'bundle' approaches for these types of infections. There is a relationship between hand hygiene and transmission of these pathogens leading to the infection of the patient. The process of transmission of pathogens from health care workers to patients occurs in five stages as described by the World Health Organization on Hand Hygiene in health care (World Health Organization [WHO], 2009).

The first stage includes the presence of organisms on the patient's skin and surrounding environment. For example, a patient can be colonized with gram–positive cocci in the nasal, perineal and inguinal areas. "Some of the environmental surfaces close to the patient are contaminated with the gram-positive cocci, which have most likely been shed by the patient." The second stage details that organisms must be transferred to the hands of health care workers. Contact between the health care worker and the patient then results in a cross-contamination of the microorganism. For example, the gram-positive cocci from the patient's own flora are transferred to the health care workers hands. The third stage entails that these transmitted organisms are then capable of surviving for at least several minutes on health care workers' hands. The microorganisms then continue to grow due to optimal growing conditions such as temperature, humidity, absence of hand hygiene, or lack of proper friction. The fourth stage states that, incorrect or lack of hand washing results in the continuation of contamination. This leads to the fifth stage, which includes cross-contamination. For example, a doctor has prolonged contact with the patient colonized with gram-positive cocci and has now contaminated his hands. The same doctor now moves on to see the next patient without proper hand hygiene, thus resulting in a cross-contamination and new case of health care acquired infection (WHO, 2009).

One may argue that intervention costs precede the costs of acquired infections, however, it is assumed that intervention costs will actually reduce the magnitude of the direct medical cost savings and must be considered in any cost-effective, cost-benefit analysis of infection control (WHO, 2009). One can see the implications regarding health-acquired infections in terms of cost relevance and importance. One may also question as to why hand hygiene practices are such a widely dominant topic in health care and why health care workers do not adhere to proper infection prevention practices. One thought process lies in that various health care systems lack the appropriate infrastructure and equipment needed to enable hand hygiene performance. Other influencing factors include cultural backgrounds and religious beliefs, as well as personal attitudes relating to hand hygiene. Other common factors influencing hand hygiene compliance include belonging to a particular professional category such as doctor, nursing assistant or technician, working in specific care areas, understaffing and overcrowding, and finally, wearing gowns and gloves.

Hebert's Multimodal Approach and Process Improvement Planning

Creating change in relation to process improvement can present new challenges and adversities in the health care system. Prevention of health care acquired infections begins from the

very moment the patient steps foot into a health care setting. Each care area can affect the patient in either a positive or negative way. Improvement planning revolves around proper hand hygiene technique and the overall compliance by workers. If everyone is complying in these areas, the health care system can be affected for the positive.

Primarily this includes better patient outcomes, and in turn, hospitals can begin to see cost savings. One improvement framework for cultivating hand hygiene compliance and thus, decreasing health care acquired infections includes a multimodal approach. A study was conducted through the Chesapeake Regional Medical Center alongside the Virginia Department of Health in order to improve hygiene compliance rates. Various audits were conducted in the study concluded that, offering a multimodal approach to hand hygiene creates higher levels of employee compliance. The study also demonstrated that one single approach such as offering a team huddle was not successful (Hebert, 2015).

Utilization of Hebert's (2015) Multimodal Approach includes theoretical framework, and interventions such as: education, visual cues, campaign slogan usage and direct observation. A total of twenty seconds will be needed in order to complete effective hand hygiene, thus allowing the health care provider, time to focus him or herself to be genuinely present when caring for the patient. Practitioners can employ various educational teachings to staff regarding proper hand hygiene performance, proven study outcomes, and statistical facts for patient safety implications.

Visual cues for compliance can be provided. A video instructing health care workers how to perform hand hygiene properly for ultimate effectiveness can be used. Once the clinician has viewed the video demonstration, they will be required to read and electronically sign an agreement. This is an indication that, they will participate in shared governance and comply with quality and safety measures relating to hand hygiene.

These may include, for example, posters reminding employees to perform hand hygiene upon entry and exit from patient care areas. Campaign slogan usage can be utilized within the health care setting. These slogans will serve as reminders to everyone in the hospital to wash their hands when entering and exiting the patient room. Visual posters can also be utilized for the implementation of hand hygiene practices. Within each unit of the hospital, posters demonstrating proper hand hygiene as well as various reminders can be placed outside of each patient care area (hospital room).

A quality campaign can be implemented by the team of health care workers as a reminder to comply with hand hygiene performance. In addition, the charge nurse should provide quality and safety reminders for staff including briefings on proper hand hygiene and reminders to be sure that staff are practicing this when caring for patients. Various individuals including hospital volunteer service members, unit managers, and infection prevention team members should be involved when conducting these audits.

Finally, direct observation, through the nursing manager direct observation of employees' in-patient care areas and their adherence to perform hand hygiene can be implemented. Each patient can receive a guidebook upon admission that provides information on holding staff accountable. These efforts will allow patients and their families, the right to play an important role in their health care by enabling others to be mindful. Any non-compliant employee should be held accountable.

Steps for implementation of process improvement can include the use of a hand hygiene monitoring system called Biovigil. Biovigil boasts in the fact that, the system yields results greater than 95% (Biovigil, 2015). Employees will have an opportunity to demonstrate hand hygiene compliance through the use of an accountability system that involves four simple steps; reminding, recording, reassuring, and reporting.

Hospital team members will wear a badge that will provide visual and audible alerts to wash hands when entering and exiting a patient room. Hospitals would no longer need to provide designated individuals to conduct direct observation audits, thus providing a significant cost savings.

Conclusion

When a patient comes into a health care setting, the expectation is to receive help and treatment for the better. Through the implementation and overall compliance of Hebert's (2015)

Multimodal Approach to hand hygiene, a million patient deaths per year could be prevented. Better patient outcomes leads to an average hospital cost savings of $35 billion. It is important to recognize what this kind of cost saving could do for the health care field as a whole (WHO, 2009).

Changes should be made to hand hygiene process improvement throughout hospitals across the world. These changes and modifications should focus more on employee audits, visual cue suggestions, shift huddle message reminders, active patient participation, and electronic learnings through employee engagement sites such as health stream. Each of these entities will allow for the continuation of process improvement and compliance.

One final important implementation for hospital compliance with hand hygiene includes the use of Biovigil. Accountability takes place through the non-invasive method of badge wearing by employees. Patients will be able to see their health care worker comply with hand hygiene and can be confident, that the provider is providing the safest care possible. Although health care is moving and changing at rapid speeds, some of these changes may take time to be seen statistically.

References

Allegranzi, B., & Pittet, D. (2009). Role of hand hygiene in healthcare-associated infection prevention. *Journal of Hospital Infection*, 73(4), 305-315.

Biovigil (2015). Biovigil hand hygiene awareness. Retrieved on 12-05-2015 from: http://www.biovigilsystems.com/

Hebert, J. (2015). Improving hand hygiene through a multimodal approach. *Nursing Management, 46*(11), 27-30.

Scott II, R. D. (2009). *The direct medical costs of healthcare-associated Infections in U.S. hospitals and the benefits of prevention*. Retrieved on 12-05-2015 from: http://www.cdc.gov /hai/pdfs/hai/scott_costpaper.pdfWHO Guidelines on Hand

World Health Organization (2009). WHO guidelines on hand hygiene in Health Care: First global patient safety challenge. Clean Care Is Safer Care. Geneva: World Health Organization. Retrieved on 12-05-2015 from: http://www.ncbi.nlm.nih.gov/books/NBK144014/