

INFECTION CONTROL: CAN NURSES IMPROVE HAND HYGIENE PRACTICES?

By

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Abstract

According to the Community and Hospital Infection Control Association (2009), infection prevention and control must be made up of evidence-based knowledge, and up-to-date skills and implementation practices. In their Infection Prevention Online Course (see website below), they present a series of modules designed in such a manner that all members of the health care team (both professionals and non-professionals) can use to enhance their knowledge in a range of areas in order to “strengthen infection prevention practices even in low-resource settings” (http://meds.queensu.ca/cpd/che/online_courses/infection_control)

The purpose of our paper is to help expand their educational efforts by addressing the importance of hand washing in relation to patient safety. Nurses are present in all health care settings and can play a key role in modeling and promoting evidenced- based infection control practices which will ensure the continuation of quality care for patients.

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Hospital acquired infections have generated a great deal of concern across North America and globally pose a significant threat to population health (Fauci, 2006). The World Health Organization (2009) has recently announced that the H1N1 influenza is nearing pandemic status. Patient safety is of primary importance to nurses who are present 24 hours a day, 7 days a week in all healthcare settings. Yet the safety of patients is being compromised every day simply by being present in a healthcare setting. According to the Center for Disease Control and Infection CDC (2002), in American hospitals alone, hospital-acquired infections account for an estimated 1.7 million infections and 99,000 associated deaths each year. The startling reality is that studies have shown that most hospital acquired pathogens are transmitted from patient to patient via the hands of healthcare workers (Larsen, 1988). Nurses have hands-on daily contact with their patients and therefore play a vital role in patient safety and infection control. The CDC explains how hand washing is the single most effective way to prevent the spread of infection.

The authors of this paper will highlight the historical roots of nursing involvement in infection control and how it has influenced their practice today. Hand washing, the one specific aspect of infection control that needs improvement, will be explored. The authors will identify ways in which education and pro-active intervention can increase compliance among nurses and healthcare workers and thereby promote quality of care for the patient.

Background context of nursing and infection control

The relationship between nursing and infection control was first identified by Florence Nightingale in 1854, during the Crimean war, when she served in a military hospital in Scutari, Italy (Kamisky, 2004). The conditions in the hospital were deplorable. Nightingale's observations in Scutari led her to believe that improving hygienic conditions would decrease the number of deaths. Kamisky (2004) believed that Nightingale, "championed the cause of improved hygiene, food, and living conditions for the hospitalized soldiers... she attacked the hospital conditions and called for basic public health, infection control measures, cleanliness, hygiene and education about the importance of the issue" (p.1). Jean Lawrence, chairperson of the Infection Control Nurses Association (ICNA) believed that Florence Nightingale was probably the first infection control nurse without actually realizing it (Elliott, 2004). Today, nurses are key players in the fight to ensure the survival of infection control practices.

Salient tactics to promote effective infection control practices in hospitals

While not all hospital-acquired infections can be prevented, the vast majority of them can. The chain of transmission of microorganisms consists of three elements: a source of infecting microorganisms, a susceptible host, and a transmission of the microorganism (Canadian Committee on Antibiotic Resistance, 2007). The most basic strategy for prevention of infection is something that most of us learn when we are small children: hand hygiene. Despite the well established relationship between hand washing and infection, numerous studies have indicated that hand washing among all types of healthcare workers is poor (Harris, 2000). Ministry of Health and Long Term Care (2002) believes that correct hand washing is the simple most effective way to prevent the spread of communicable disease. In this section we will present 3

major strategies that can be used to promote effective infection control practices in hospital: (1) **Education** that promotes the “why and how to” of washing hands properly. (2) **Intervention** strategies to promote clean hands in a hospital environment (3) **Evaluation** tools used to monitor the practice of hand washing.

Education

The relationship between knowledge and power helps to employ and implement strategies to reduce infection control and improve patient safety (WHO, 2005). Educating healthcare workers, clients and families is a vital strategy for effective infection control. There are a variety of educational strategies that can be used to help promote hand washing and infection control:

- Hand hygiene promotion posters can be placed in visible areas of the hospital reminding healthcare workers , patients and visitors to practice proper hand hygiene
- Patient admission videos can be used to teach patients and visitors the importance of practicing hand hygiene and how it is appropriate to ask or remind healthcare workers to practice hand hygiene as well
- Hospital infection control teams can be utilized to provide in-services to healthcare workers regarding the importance of hand hygiene and infection control
- Placing diagrams above sinks that outline the proper way to wash hands with soap and water and the proper use of hand sanitizers can be helpful
- Instructional hand washing videos can be played on televisions in hospital lounges and waiting rooms

Intervention strategy

Healthcare workers and caregivers often fail to comply with hand washing protocols due to inconvenient access to hand washing utilities or shortage of time to perform this procedure. There are a variety of interventions that can be implemented to increase compliance to hand hygiene and ensure that hands and frequently handled equipment remain as clean as possible in the hospital.

- Alcohol based hand rubs with no-touch dispensers should be available in every patient room, outside elevators, in waiting rooms and at staff workstations. The Hand Hygiene Resource Centre at www.handhygiene.org found that when hand sanitizers were placed next to patient’s bed that healthcare workers cleaned their hands significantly more
- Automatic sinks should be placed close to the exit of each room. This will increase the likelihood of staff washing their hands between patients
- There should be a policy regarding fingernails that are long, artificial or with chipped nail polish. These are reservoirs for bacteria (Gilboy & Howard, 2008)
- Rings also are a haven for bacteria. Policies need to be commenced and enforced on the wearing of rings
- Staff should be encouraged to wipe their frequently handled stethoscopes between patients and should be discouraged from using cloth covers on their stethoscopes

- Equipment that is handled and used by healthcare workers between patients should be cleaned regularly. Gilboy and Howard described the importance of cleaning equipment in the 2008 article, *Compliance with Hand Hygiene Guidelines*, “cleaning practices for any medical equipment need to be followed 100% of the time” (p.197)

Evaluation

Opportunities to use surveillance activities as strategies to evaluate the effectiveness of hand washing are important and instrumental in evaluating infection control measures. The following are a few examples of evaluation tools:

- Spot checks of hand hygiene compliance can be done with a product called Glo-Germ (www.glo.germ.com) (Gilboy & Howard, 2008). This product demonstrates how well one washes their hands by using a special lamp that shows if something is left on the hands
- A 24 hour observational study of hand washing in a hospital setting during a regular shift can be used to monitor whether hand washing occurred before contact with the patient and following contact with the patient. Posting these results can provide the necessary feedback to the workers to raise their awareness
- A survey of hand washing techniques could include questions such as: (1) How many times do you wash your hands during a shift? (2) How much time do you spend washing your hands each time they are washed? (3) Do you wash your hands with soap each time? (4) Do you wash your hands between each patient? (5) Do you wash your hands after working with a patient with a cough? (6) Do you wash your hands before changing a dressing?

Conclusion

Hospital acquired infections are a threat to population health and are not going away any time soon. Due to frequent contact between health care workers and patients, pathogens can be transmitted from one patient to another if good quality hand hygiene is not maintained. It is the responsibility of health care workers to keep the patients in their care safe by modeling effective and frequent hand washing practices. A national update from Nurse.com (2009) states that one of the actions needed by nurses to manage HINI flu is frequent hand washing. Nurses need to have a proactive voice in the promotion of current best practices for hand washing hygiene. The Journal of Hospital infection (2001) explains how multifaceted approaches including a combination of education, written material, intervention, reminders and continued performance feedback, can have an important effect on hand washing compliance and rates of hospital-acquired infection. Nurses can take a leadership role in all healthcare settings to foster an organizational culture that promotes and reflects a strong obligation to patient safety through effective hand washing.

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