

REVIEW PAPER

The Importance of Nurses Hand Hygiene

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Abstract

Introduction: Nurses are aware of the rationale for hand hygiene procedures. Nurses represent a large working group that performs the greatest amount of direct patient care in Health Services. Hand hygiene is one of the most effective measures to prevent hospital acquired infections.

Aim: to point out the importance of nurses' hand hygiene

Method: a review of articles with key words "hand, hygiene, hand, contamination, nurse, and guideline".

Results: Infectious diseases are a particular risk to the very young, the elderly, those with a pre-existing disease, and people with a compromised immune system. Nurses washing their hands not only prevent them from getting sick, but it also reduces the risk of infecting others.

Key Words: hand hygiene; hand contamination; health care-associated infection

Introduction

Infections associated with healthcare has been targeted by the World Alliance for Patient Safety during the first biennial Global Patient Safety Challenge, 'Clean Care is Safer Care' compliance to hand hygiene is widely acknowledged as the most important way of reducing infections in healthcare facilities and the spread of antimicrobial resistance (WHO guidelines on hand hygiene in health care, 2005; WHO Patients Safety, 2009; The African Partnerships for Patient Safety 2012).

In USA serious nosocomial infections cause 99,000 patient deaths per year. Research has shown that while healthcare workers state largely favorable attitudes towards hand-cleaning practices, observed compliance rates are below 30%. In Europe, the estimated five million Hospital-acquired infections (HAIs) that occur annually have an assumed attributable mortality of 50,000 to 135,000 at a cost of €13 to €24 billion. Adequate hand hygiene (HH) among hospital personnel could prevent an estimated 15% to 30% of the HAIs (Yalcin, 2003; McGuckin,

Waterman and Govednik 2009; Mathur, 2011; Huis et al, 2012).

Reasons given by professionals for the lack of compliance to hand-cleaning practices highlights several explanatory factors, including: work conditions (lack of time), infrastructures (lack of equipment), training (inadequate), human environment (superiors, colleagues, unscrupulous patients) and the health of medical and nursing staff (skin irritations caused by frequent hand-cleaning). Infection prevention and infection control have always been serious topics, but this is particularly true today, with the spread of the swine flu and associated infections (Randle, Clarke and Storr, 2006; Van Enk, 2006).

Failure to perform appropriate hand hygiene is considered to be the leading cause of Health Care Associated Infections and the spread of multi-resistant organisms and has been recognized as a significant contributor to outbreaks (Boyce, 1999; WHO Patients Safety, 2009).

Good personal hygiene plays a major part in reducing and eliminating the spread of germs and infections from person-to-person. It also helps in reducing the spread of infectious illnesses, including colds, flu and other upper respiratory illnesses. A big part of personal hygiene is hand hygiene and incorporating safety measures in developing habits that will stave off illnesses can help to further reduce the spread of germs and infections (CDC, 2002; CDC, 2003).

The best time to wash would be after any of the following: 1) If the person has been exposed to germs via someone coughing or sneezing, 2) If the person is in health care and need to wash frequently to reduce your exposure to germs, 3) if a person handles raw meat or other substances that can transfer bacteria, 4)

After using the restroom, touching doorknobs or handles on doors. Although there are many situations that warrant the need to frequently wash hands, there are also other times when it may not be so obvious, but is necessary.

Germs can stay alive on hands for up to three hours. Millions of germs hide under watches and bracelets and there could be as many germs under your ring as there are people in Europe (Aiello et al, 2008; Aiello et al, 2010; Allegranzi and Pittet 2009).

When should hand hygiene be performed?

In health care services, hand hygiene must be performed (Ayliffe, Babb and Taylor, 2000; Magiorakos et al, 2009):

- Before the beginning of the shift and after the end.
- Before and after contact with any patient, their body substances or items contaminated by them.
- Between different procedures on the same patient.
- Before preparing, handling, serving or eating food or feeding a patient/resident.
- After assisting patients with personal care (e.g. assisting patient to blow nose, toileting or doing wound care).
- Before and after performing invasive procedures.
- Before putting on and after taking off gloves.
- After performing personal functions (e.g. using the toilet, blowing your nose).
- When hands come into contact with secretions, excretions, blood and body fluids (use soap and running water whenever hands are visibly soiled).

How to wash hands (WHO guidelines on hand hygiene in health care, 2005; Pittet Allegranzi and Joyce 2009):

- Wet hands with water.
- Apply enough soap and handwash to cover all hand surfaces.
- Rub hands palm to palm.
- Right palm over the other hand with interlaced fingers and vice versa.
- Palm to palm with fingers interlaced.
- Backs of fingers to opposing palms with fingers interlocked.

- Rotational rubbing of left thumb clasped in right palm and vice versa.
- Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa.
- Rinse hands with water.
- Dry thoroughly with towel. Duration of procedure: At least 15 seconds.
- Use the same towel to turn off the faucet.

Use of soap and water

The mechanical action of washing, rinsing and drying removes transient bacteria present on the hands. Hand washing with soap and running water must be performed whenever hands are visibly soiled. Bar soaps are not acceptable in health care settings except for single patient personal use. Liquid soap containers should be used until empty and then discarded. Soap containers must not be topped up, as there is a risk of contamination of residual soap. Antibacterial soaps may be used in critical care areas such as ICUs, or wherever invasive procedures are performed. Brush or hot water should not be used for hand washing, because they cause bruises and skin dryness creating environment to develop microorganisms (WHO guidelines on hand hygiene in health care, 2005; WHO Patients Safety, 2009; The African Partnerships for Patient Safety 2012).

Alcohol-based hand rubs (Boyce et al, 2006; WHO Patients Safety, 2009) are preferred for decontaminating hands and they contain more than 60% alcohol. They have the following immediate advantages:

- Elimination of the majority of germs
- The short time required for action (20-30 seconds)
- Availability of the product at the point of care
- Better skin tolerability
- No need for any particular infrastructure.

They must be used in health care settings in situations where running water is not available. Using alcohol-based hand rub is better than washing hands when hands are not visibly soiled (Fung and Cairncross, 2006).

Before using alcohol based hand rubs, hands must be dry because otherwise the action of the alcohol will be limited.

Use of gloves

- The use of gloves does not replace the need for hand hygiene by either hand rubbing or hand washing.
- Wear gloves when it can be reasonably anticipated that contact with blood or other potentially infectious materials, mucous membranes or non-intact skin will occur.
- Remove gloves after caring for a patient. Do not wear the same pair of gloves for the care of more than one patient.
- When wearing gloves, change or remove gloves during patient care if moving from a contaminated body site to either another body site within the same patient or the environment.
- The reuse of gloves is not recommended. In case of glove reuse, implement the safest reprocessing method.

Benefits of hand hygiene

Hand hygiene importance was first realized in a Vienna hospital in the 19th century. Maternity patients were dying at a high rate. Dr. Ignaz Semmelweis started ordering his staff members to wash their hands before treating the patients, drastically lowering the death rate as a result (Boyce et al, 2006; Pittet, 2000; Pittet, 2001).

The transfer of bacteria from cadavers to the patients from the staff's hands was the culprit in the deaths. Ensuring that today's medical professionals make hand washing a priority is essential. Simple activity of frequent hand-washing has the potential to save more lives than any single vaccine or medical intervention.

It is one of the most effective and inexpensive ways to prevent diarrheal diseases and pneumonia, which cause more than 3.5 million deaths worldwide in children under the age of 5 every year. Although people around the world clean their hands with water, very few use soap to wash

their hands (Institute of Medicine. *To Err is Human*, 2000)

Conclusion

Hand-to-hand contact can spread mild conditions, such as the common cold, but also more severe or life-threatening diseases. Infectious diseases are a particular risk to the very young, the elderly, those with a pre-existing disease, and people with a compromised immune system.

Nurses washing their hands not only prevent them from getting sick, but it also reduces the risk of infecting others. If they don't wash their hands properly before coming into contact with others, they can infect their patients but also their family members (Pittet, Allegranzi and Joyce 2009).

The Centers for Disease Control and Prevention clearly mandates that all healthcare personnel decontaminate their hands as they enter a patient's room and as they leave the room (CDC, 2002; CDC 2003).

The perceived barriers to hand washing that are consistently being targeted in research studies are inaccessible or inconveniently located sinks and dispensers, forgetfulness, heavy workload, ignorance of guidelines and lack of scientific knowledge. Placing dispensers immediately next to each bed is a solution to the problem or using the visual display of large posters emphasizing the importance of hand washing reminds staff to wash their hands (Magiorakos et al 2009; Aiello et al, 2008; Aiello et al, 2010 Allegranzi and Pittet 2009).

To comply with routine hand hygiene recommendations, health care workers should ideally perform hand hygiene where and when care is provided, which means at the point of care and at the moments indicated, and following the recommended technique and time.

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