

Example of research paper on handwashing compliance in the hospital setting

[Literature](#), [Russian Literature](#)



Handwashing is the gold standard for the prevention of health care-associated infections (HCAI), yet the rate of handwashing compliance is universally low. This study reviews the role of hands in the transmission of HCAI, factors affecting compliance, and suggested strategies to promote compliance. One of the first things they teach you in nursing school is that hand hygiene is critical to healthcare; yet health care-associated infections (HCAI) continue to represent a significant safety hazard to patients. The World Health Organization estimates that each year hundreds of millions of patients all over the world develop infections associated with health care. It is difficult to estimate the impact of HCAI on the burden of care: patients have to prolong their stay in hospitals, and hospitals have to spend more resources to care for HCAI in addition to other diseases.

This is not a new problem; however, the issue has become more complicated with the global increase in the number of antimicrobial-resistant bacteria. The risk and impact of HCAI is higher in developing countries, where noncompliance with hand hygiene guidelines remains a major issue (World Health Organization).

The Role of Hands in the Transmission of HCAI

Hands play a significant role in the transmission of infections. Outbreaks of Salmonella continue to plague children's hospitals in developing and transitional countries. During Salmonella outbreaks, the isolates all have been shown to have the same biotype and to be resistant to the same panel of antibiotics. In developed countries, outbreaks of multiple-drug resistant strain of *Klebsiella pneumoniae* are still common. This organism colonizes the bowel and skin and it can therefore be easily transmitted via staff hands.

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Here too, all the isolates of the bacterial strains that are tested are found to be identical. Both types of outbreaks generally stop after the safety measures developed by the World Health Organization are followed. The most important safety measure amongst them is that all nurses are made to comply with handwashing protocols.

This illustrates that although science and technology continue to advance the delivery of health care, the safety of patients still relies on the adherence of the most basic of hygiene practices—handwashing.

Compliance with Hand Hygiene

Health care-associated infections continue to harm patients all over the world. A great proportion of harm can be avoided through universal adherence of basic hand hygiene practices. The World Health Organization evaluated a long list of methods that have been proposed and tested in a number of studies to determine which would be the best to include in their multi-focal model. But first, the World Health Organization examined current levels of compliance with existing guidelines for hand hygiene.

The Society for Healthcare Epidemiology of America (SHEA) released a report through WHO-Patient Safety that proper hand hygiene can lower the risk of MRSA infection, yet clearly compliance remains low because MRSA outbreaks are endemic.

Noncompliance of healthcare providers with international hand hygiene guidelines is a global problem. In fact, noncompliance is so dismal that adherence to hand hygiene by 59% for nurses and 41% by doctors is considered high. This can make you stop and think when you consider the

high level of morbidity and mortality due to hand transmission of pathogens. For example, 34% of all catheter-associated urinary tract infections in the United States are associated with HCAI and affects a large number of elderly patients. This group of patients is particularly vulnerable to infections yet health care practitioners are lax in their precautions.

The wearing of gloves has been shown to lower the risk of transmission of organisms by healthcare workers' hands, but gloves were never meant as a substitute for hand hygiene. Unfortunately, many nurses disagree with this assessment and neglect to wash their hands after wearing gloves, increasing the risk of the spread of bacterial infections.

Factors Affecting Compliance

No nurse harms a patient with intent, yet nurses continue to practice healthcare without adequate protection. So what causes nurses to lower their healthcare standards and avoid compliance with handwashing guidelines?

A couple of reasons are that sometimes it is difficult to comply, and sometimes the nurses are influenced by their co-workers, especially when it is their superiors who are not complying with established hand hygiene guidelines. At my hospital, I have witnessed many doctors examine a patient without first (or after) washing their hands. Worse, sometime doctors do not even bother to wear gloves, even when examining patients that are at great risk of infection, like infants and the elderly.

With nurses, poor adherence to hand washing correlates with the number of shifts they have, and with the number of patients they have under their care.

What is particularly interesting is that knowledge of the patients' infectious status or vulnerability has no effect on a doctor's or nurse's decision to adhere to hand hygiene practices.

You would think that hand-hygiene compliance would be high in the emergency department, but studies have shown that the opposite is true. Emergency room workers are under a lot of pressure and must react fast, so time is a factor. Often healthcare workers in emergency rooms do away with hand hygiene unless they are worried about getting infected with HIV or hepatitis B.

Strategies to Promote Handwashing Compliance

There is no question that HCAI represents a serious threat to anyone who is admitted into a hospital. Healthcare workers spread pathogens all over the hospital via their hands. Clearly, this issue needs to be addressed. The following are some of the World Health Organization's strategies to promote handwashing compliance.

First, wash your hands. Plain soap and water is the gold standard although alcohol-based solutions should be considered in situations in which the handwashing compliance rate is low for any number of reasons. For example, daily exposure to soap can dry and irritate the hands, and this is one of the reasons for the low rate of handwashing compliance by healthcare workers, therefore alternative handwashing solutions have been suggested. Monitoring handwashing has also been proven to be effective. At our hospital in Stony Brook we observed the rate of handwashing compliance by healthcares in the maternity ward and found that there was a lot of room for

improvement. Of course, the purpose of monitoring is not just to determine whether there is compliance, monitoring is only effective when it is accompanied with feedback.

There are many studies promoting the use of handwashing compliance, but one of the simplest and most relevant for developing countries is the study conducted in Mali by Allegranzi et al (2010) in which the standards proposed by the WHO multimodal hand hygiene improvement strategy were applied in the setting of a modestly funded hospital. The multi-focal study consisted of (1) using a locally produced alcohol-based handwashing product, (2) monitoring of compliance, (3) providing feedback, (4) educating staff, and (5) promoting safety. Hand hygiene practice and compliance, healthcare worker perceptions, and use of the product were evaluated before and after the study. Compliance climbed from 8. 0% at baseline to 21. 8% at follow-up, with 93. 3% of healthcare workers preferring the alcohol-based locally produced product over plain soap. The authors are confident that compliance would increase even more as the implementation of the strategy progresses. The significance of this study is that hygiene promotion is possible in a developing country and that the alcohol-based product was critical to handwashing compliance.

In America, one of the most successful hand hygiene programs is the High Five program instituted at New Hampshire Hospital, which aims for 100% adherence with the handwashing guidelines of the Center for Disease Control. Like the WHO program, the High Five program is multi-focal. The five tenets of the New Hampshire High Five program are: (1) leadership

commitment, handwashing compliance must be promoted at all levels of the organization; (2) availability and convenience of products, including a variety of options; (3) hand hygiene training and competency, all staff will receive training and education on hand hygiene; (4) measurement, compliance will be monitored; (5) feedback and accountability, supervisors will be held responsible for compliance of their staff.

In conclusion, handwashing may be a relatively simple method for the prevention of health care-associated infections, but the complex interplay of psychological, sociological, economical and technical factors determine hand-washing compliance by health care workers, regardless of the location of the country or the type of hospital.

References

Ağın H, Ayhan FY, Gülay Z, Gülfidan G, Yaşar N, Eraç B, Devrim I. (2011).

The evaluation of clusters of hospital infections due to multidrug-resistant *Salmonella enterica* serovar typhimurium in the neonatal unit: a two-year experience. *Turk J Pediatr.* 53(5): 517-21.

Allegranzi B, Sax H, Bengaly L, Richet H, Mintet al.(2010). Successful implementation of the World Health Organization hand hygiene improvement strategy in a referral hospital in Mali, Africa. *Infect Control Hosp Epidemiol.* 31(2): 133-41.

Arenas MD, Sánchez-Payá J, Barril G, et al. (2005). A multicentric survey of the practice of hand hygiene in haemodialysis units: factors affecting compliance. *Nephrol Dial Transplant.* 20(6): 1164-71.

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Bedenić B, Schmidt H, Herold S, Monaco M, Plecko V, et al. (2005). Epidemic and endemic spread of *Klebsiella pneumoniae* producing SHV-5 beta-lactamase in Dubrava University Hospital, Zagreb, Croatia. *J. J Chemother.* 17(4): 367-75.

Boyce JM. (2011). Measuring healthcare worker hand hygiene activity: current practices and emerging technologies. *Infect Control Hosp Epidemiol.* 32(10): 1016-28.

Cheng VC, Tai JW, and Chan W et al. (2010). Sequential introduction of single room isolation and hand hygiene campaign in the control of methicillin-resistant *Staphylococcus aureus* in intensive care unit. *BMC Infect Dis.* 10: 263.

Creedon, SA. (2005). Healthcare workers' hand decontamination practices: compliance with recommended guidelines. *J Adv Nurs.* 51(3): 208-16.

Erasmus V, Daha TJ, Brug H, Richardus JH, Behrendt MD, Vos MC, and van Beeck EF. (2010). Systematic review of studies on compliance with hand hygiene guidelines in hospital care. *Infect Control Hosp Epidemiol.* 31(3): 283-94.

Erasmus V, Huis A, Oenema A, van Empelen P, et al. (2011). The ACCOMPLISH study. A cluster randomised trial on the cost-effectiveness of a multicomponent intervention to improve hand hygiene compliance and reduce healthcare associated infections. *BMC Public Health.* 11: 721.

Ferguson KJ, Waitzkin H, Beekmann SE, and Doebbeling BN. (2004). Critical incidents of nonadherence with standard precautions guidelines among community hospital-based health care workers. *J Gen Intern Med.* 19(7): 726-31.

Fink R, Gilmartin H, Richard A, Capezuti E, Boltz M, Wald H. (2012).

Indwelling urinary catheter management and catheter-associated urinary tract infection prevention practices in Nurses Improving Care for Healthsystem Elders hospitals.

Am J Infect Control. [Epub ahead of print] French GL, Shannon KP, Simmons N. (1996). Hospital outbreak of *Klebsiella pneumoniae* resistant to broad-spectrum cephalosporins and beta-lactam-beta-lactamase inhibitor combinations by hyperproduction of SHV-5 beta-lactamase. *J Clin Microbiol.* 34(2): 358-63.

Fuller C, Savage J, Besser S, Hayward A, Cookson B, Cooper B, Stone S.

(2011). "The dirty hand in the latex glove": a study of hand hygiene compliance when gloves are worn. *Infect Control Hosp Epidemiol.* 32(12): 1194-9.

Gould DJ, Moralejo D, Drey N, and Chudleigh JH. (2010). Interventions to improve hand hygiene compliance in patient care. *Cochrane Database Syst Rev.* (9): CD005186.

Hammami A, Arlet G, Ben Redjeb S, Grimont F, Ben Hassen A, Rekik A, Philippon A. (1991). Nosocomial outbreak of acute gastroenteritis in a neonatal intensive care SHV-2 beta-lactamase. *Eur J Clin Microbiol Infect Dis.* 10(8): 641-6.

Henderson DK (2006). Managing methicillin-resistant staphylococci: a paradigm for preventing nosocomial transmission of resistant organisms . Am J Infect Control. 34(5 Suppl 1): S46-54: discussion S64-73.

Huang SS, Yokoe DS, Hinrichsen VL, et al.(2006). Impact of routine intensive care unit surveillance cultures and resultant barrier precautions on hospital-wide methicillin-resistant *Staphylococcus aureus* bacteremia. Hua Clin Infect Dis. 43(8): 971-8.

Kampf G, and Löffler H. (2010). Hand disinfection in hospitals - benefits and risks. J Dtsch Dermatol Ges. 8(12): 978-83.

Marena C, Lodola L, Zecca M, (2002). Assessment of handwashing practices with chemical and microbiologic methods: preliminary results from a prospective crossover study. Am J Infect Control. 30(6): 334-40.

Mathai E, Allegranzi B, Kilpatrick C, and Pittet D. (2010). Prevention and control of health care-associated infections through improved hand hygiene. Indian J Med Microbiol. 28(2): 100-6.

McGuckin M, Storr J, Longtin Y, et al. (2010). Patient empowerment and multimodal hand hygiene promotion: a win-win strategy. Am J Med Qual. 26(1): 10-7.

Pessoa-Silva CL, Posfay-Barbe K, Pfister R, et al. (2005). Attitudes and perceptions toward hand hygiene among healthcare workers caring for critically ill neonates. Infect Control Hosp Epidemiol. 26(3): 305-11.

Pittet D, Allegranzi B, and Storr J. (2008). The WHO Clean Care is Safer Care programme: field-testing to enhance sustainability and spread of hand hygiene improvements. J Infect Public Health. 1(1): 4-10.

Polat S, Parlak Gürol A, Cevik U. (2011). Hand hygiene compliance of nurses: a 5-unit observational study in North-Eastern Anatolia. *Int J Nurs Pract.* 17(4): 435-40.

Samuel R, Almedom AM, Hagos G, et al. (2005).

Promotion of handwashing as a measure of quality of care and prevention of hospital-acquired infections in

Eritrea: the Keren study. *Afr Health Sci.* 5(1): 4-13. Scheithauer S, Oude-Aost J, Heimann K, Haefner H, Schwanz T, et al. (2011). Hand hygiene in pediatric and neonatal intensive care unit patients: daily opportunities and indication- and profession-specific analyses of compliance. *Am J Infect Control.* 39(9): 732-7.

Vos MC, Behrendt MD, Melles DC, Molle et al. (2009). 5 years of experience implementing a methicillin-resistant *Staphylococcus aureus* search and destroy policy at the largest university medical center in the Netherlands. *Infect Control Hosp Epidemiol.* Oct; 30(10): 977-84.

WHO Guidelines on Hand Hygiene in Health Care. (World Health Organization, Geneva) 2009. Available at: http://whqlibdoc.who.int/publications/2009/9789241597906_eng.pdf . [Accessed on 25 Apr 2012]

Williams C, Wilkinson M, McShane P, et al. (2011). The use of a measure of acute irritation to predict the outcome of repeated usage of hand soap products. *Br J Dermatol.* 164(6): 1311-5.

Williams CO, Campbell S, Henry K, Collier P. (1994). Variables influencing worker compliance with universal precautions in the emergency department.

Am J Infect Control. 22(3): 138-48.

Zaragoza M, Sallés M, Gomez J, et al. (1999). Handwashing with soap or alcoholic solutions? A randomized clinical trial of its effectiveness . Am J Infect Control. 27(3): 258-61.

Zoabi M, Keness Y, Titler N, Bisharat N. (2011). Compliance of hospital staff with guidelines for the active surveillance of methicillin-resistant Staphylococcus aureus (MRSA) and its impact on rates of nosocomial MRSA bacteremia. Isr Med Assoc J. 13(12): 740-4.