

Hospital Epidemiology and Infection Control

Hand Hygiene Series 2007

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Why is cleaning your hands between patients important?

Many studies have shown that the bacteria that cause hospital-acquired infections are most frequently spread from one patient to another on the hands of healthcare workers.

The Centers for Disease Control and Prevention (CDC) and other healthcare-related organizations believe that cleaning your hands before and after having contact with patients is one of the most important measures for preventing the spread of bacteria in healthcare settings.

Many staff members don't realize when they have germs on their hands!

Nurses, doctors and other healthcare workers can get 100s or 1000s of bacteria on their hands by doing simple tasks, such as:

- pulling patients up in bed
- taking a blood pressure or pulse
- touching a patient's hand
- rolling patients over in bed
- touching the patient's gown or bed sheets
- touching equipment like bedside rails, over-bed tables, IV pumps

Culture plate showing growth of bacteria 24 hours after a nurse placed her hand on the plate.



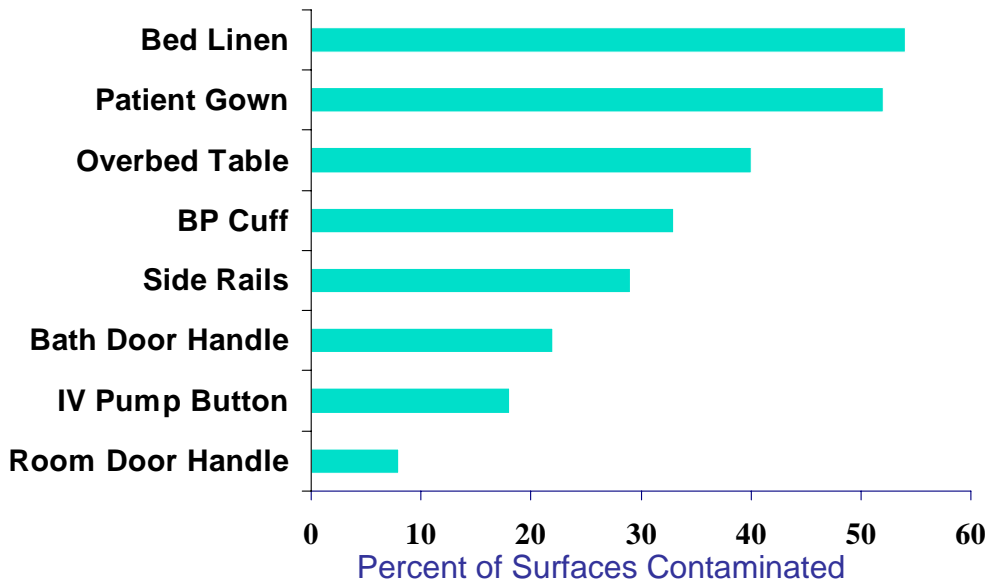
Organisms on Inanimate Objects...

- Can colonize or infect the host and are transmissible during both colonization or infection.
- Generally can survive in the environment for long periods of time, i.e. days and weeks, not just hours.
- Transmission has been linked to poor cleaning as well as direct healthcare worker-to-patient contact.



Various ways healthcare workers contaminate their hands:

Frequency of Environmental Contamination of Surfaces in the Rooms of Patients with Methicillin-Resistant *S. aureus* (MRSA)



Resistant bacteria on the skin or in the gastrointestinal tract of patients can often be found on common items.

Healthcare workers can contaminate their hands by touching environmental surfaces near affected patients.

When should you wash your hands with soap and water?

Wash your hands with plain soap & water:

- if your hands are visibly soiled or dirty
- if your hands are visibly contaminated with blood or body fluids
- before eating
- before and after using the restroom
- after removing gloves
- at the beginning and end of your shift
- touching contaminated equipment





Tips on how to wash your hands effectively:

When washing hands with plain soap & water:

- wet hands first with warm water (avoid hot water)
- apply 3 to 5 ml of liquid soap to hands (approximately size of 50¢ piece)
- rub hands together for at least 15 seconds
- cover all surfaces of the hands and fingers
- rinse hands thoroughly with water
- dry hands thoroughly with paper towel
- use paper towel to turn off water faucet
- use paper towel to open door of lavatory
- discard towel in nearest trash container

Since frequent hand washing is not always an option, experts have suggested that alternative strategies be developed for improving hand hygiene among healthcare workers. One way is to use an alcohol-based hand sanitizer.



When should you wash your hands with alcohol-based hand sanitizers?

Wash your hands with an alcohol-based hand sanitizer:

- if your hands are not visibly soiled, dirty or contaminated with blood or body fluids
- before having direct contact with patients
- after having direct contact with a patient's skin
- after having contact with body fluids, wounds or broken skin
- after touching equipment or furniture near the patient
- after removing gloves because
 - latex glove leakage can range from 3%-52%, depending on the study
 - vinyl glove leakage can range from 4%-64%, depending on the study
 - resident flora as well as transient flora can be on your hands, underneath the gloves, multiplying every 20 minutes.

Tips on using an alcohol-based hand sanitizer effectively:

- apply 1.5 to 3 ml of an alcohol gel or rinse (approximately the size of a quarter) to the palm of one hand, and rub hands together
- cover all surfaces of your hands and fingers
- include areas around and under fingernails
- continue rubbing hands together until alcohol dries, which should take at least 10-15 seconds before your hands feel dry, if a sufficient amount of gel or rinse was used



More than 20 published studies have shown that alcohol-based hand sanitizers are more effective than either plain soap or antibacterial soap and water in reducing the number of live bacteria on the hands.

PRACTICE HAND HYGIENE!

Hand hygiene helps reduce the spread of infection. Wherever you work at Johns Hopkins Medical Institutions, you can protect your patients and yourself from hospital acquired infections by washing your hands or using alcohol-based hand sanitizer.

HAND HYGIENE DOS

WHAT: Soap and Water

WHEN:

- Whenever hands are visibly soiled
- Before patient care
- Between patient contacts
- After touching environmental surfaces or equipment near patients
- After sneezing coughing, or blowing your nose
- After using the bathroom
- Before and after eating, handling food, or smoking
- Before and after any invasive procedure, such as administering injections
- After handling dressings, catheters, bedpans, specimens or urine
- After removing gloves

WHERE: Sinks are located in all patient care areas, bathrooms, and procedure and exam rooms.

HOW: Wet hands first, lather hands and wrists, including under fingernails, with soap for 15 seconds, rinse hands, turn off faucet handles with paper towel.



WHAT: Alcohol-based Instant Hand Sanitizer

WHEN:

- Before patient care
- Between patient contacts
- After touching environmental surfaces or equipment near patients
- After sneezing coughing, or blowing your nose
- After using the bathroom
- Before and after eating, handling food, or smoking
- Before and after any invasive procedure, such as administering injections
- After handling dressings, catheters, bedpans, specimens or urine
- After removing gloves
- In place of soap and water whenever hands are not visibly soiled

WHERE: Dispensers of Purell Instant Hand Sanitizer are wall mounted in all patient care areas.

HOW: Coat all surfaces of your hand thoroughly with instant hand sanitizer, including your palms, in between fingers and under fingernails, backs of hands and around wrists. Rub your hands briskly until they feel comfortably dry. It takes about 15 seconds, and no water or towels are needed.

WHY: Studies of hospital infection rates show that when health care workers' hand hygiene compliance increases, hospital-acquired infection rates decrease.¹

¹ D Pittet, S Hugonnet et al. Effectiveness of a hospital-wide programme to improve compliance with hand hygiene. *Lancet* 356 (2000), pp. 1307-1312.