

Department of Hospital Epidemiology and Infection Control

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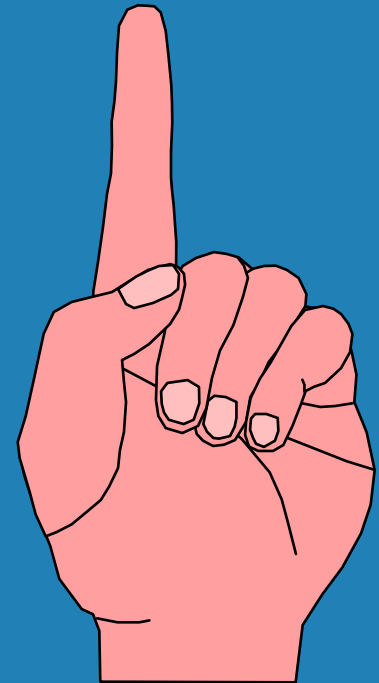
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Updated 4/21/06

REMEMBER!

Hand hygiene is the most important measure to help reduce the spread of infections – at the hospital, doctor's office, home, day care, everywhere!





IMPROVING YOUR HAND HYGIENE PRACTICES

Important topics:


- Why should we clean our hands?
- Barriers to frequent handwashing
- How do hands become contaminated?
- Advantages of alcohol-based hand rubs
- New Hand Hygiene Recommendations



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



Does handwashing really reduce the spread of bacteria in healthcare settings?

Yes!

A scientific study performed in a hospital nursery found that when nurses did not wash their hands between patient contacts, babies acquired Staph bacteria much more frequently than babies cared for by nurses who washed their hands with an antimicrobial soap.

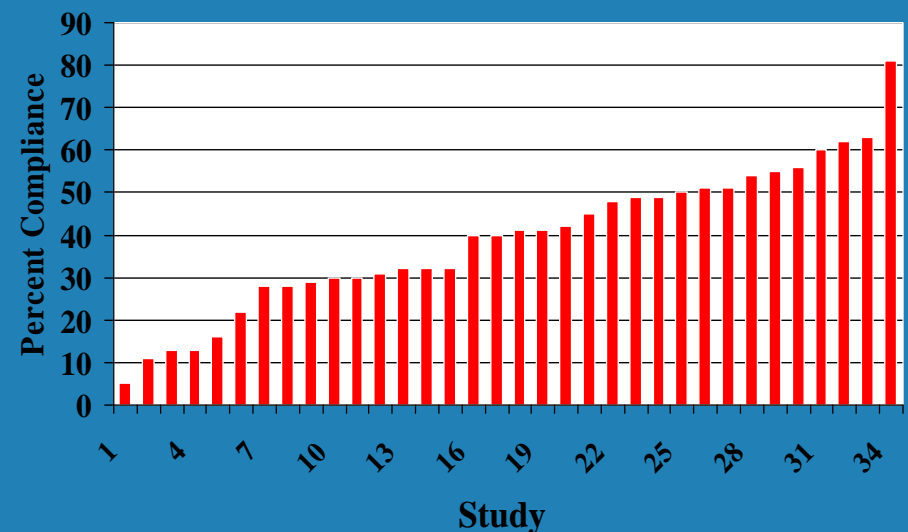
Several other studies also show that washing hands between patient contacts reduces the spread of bacteria in healthcare.

How is our track record on handwashing in healthcare facilities?

Although handwashing has been proven to reduce the spread of microorganisms in healthcare facilities, healthcare workers often do not wash their hands when recommended.

In 34 studies of handwashing, workers washed their hands only 40% of the time.

Average Compliance of Personnel in 34 Studies of Handwashing





Why is compliance with recommended handwashing so poor?

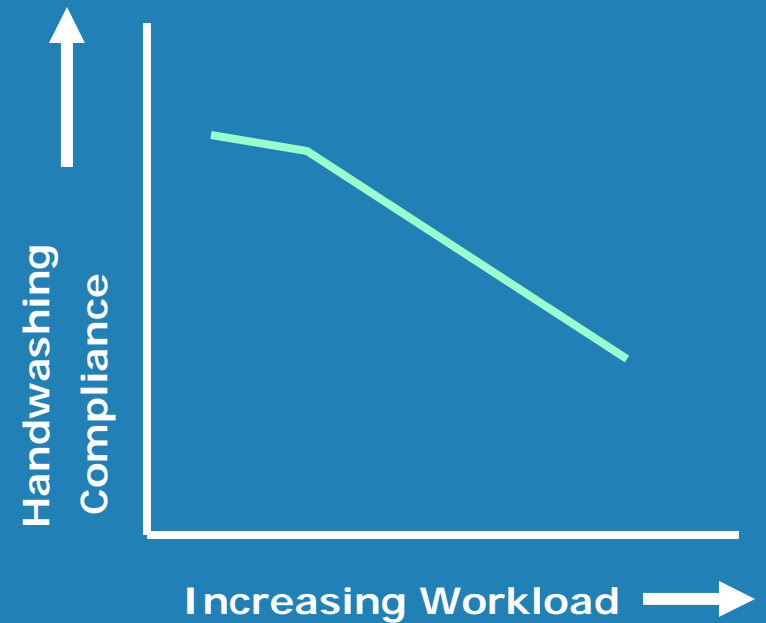
Here are some reasons why healthcare workers do not wash their hands as often as they should:

- heavy workloads (too busy)
- sinks are poorly located
- skin irritation caused by frequent exposure to soap and water
- hands don't look dirty
- handwashing takes too long

Personnel with heavy workloads have little time to wash their hands

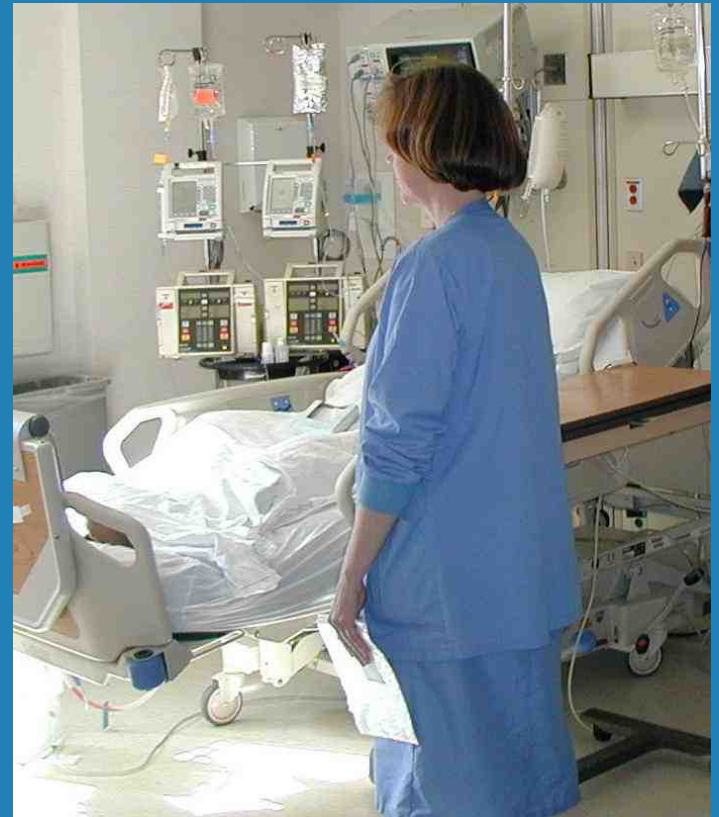
A recent study showed that the busier healthcare workers are, the less likely they are to wash their hands when recommended

Nursing shortages have caused nurses to be busier than ever before



Sinks are often poorly located

Sinks used for handwashing are often installed in inconvenient locations. Personnel may fail to wash their hands when indicated because it is too much trouble to get to the sinks provided. Can you find the sink in this picture?

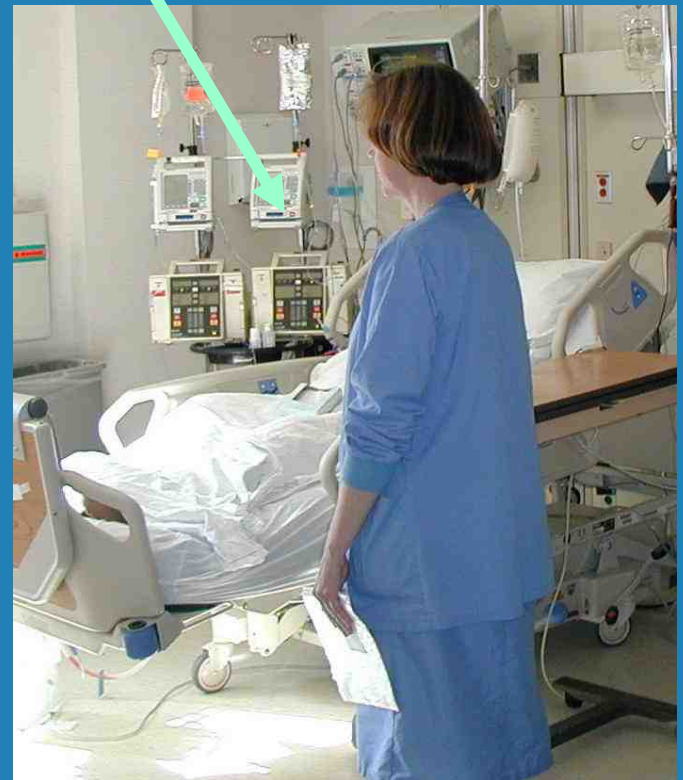


Location, location, location ...

The sink mentioned in the previous slide is located behind the patient's bed and behind several IV pumps.

(see arrow)

Personnel are unlikely to use handwashing sinks if they are not readily accessible.



Another reason why personnel don't wash their hands often

Frequent handwashing with soap and water often causes skin irritation and dryness.

In the winter months, some personnel may even develop cracks in their skin that cause bleeding, as seen in the adjacent figure.



Many personnel 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, like

- 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

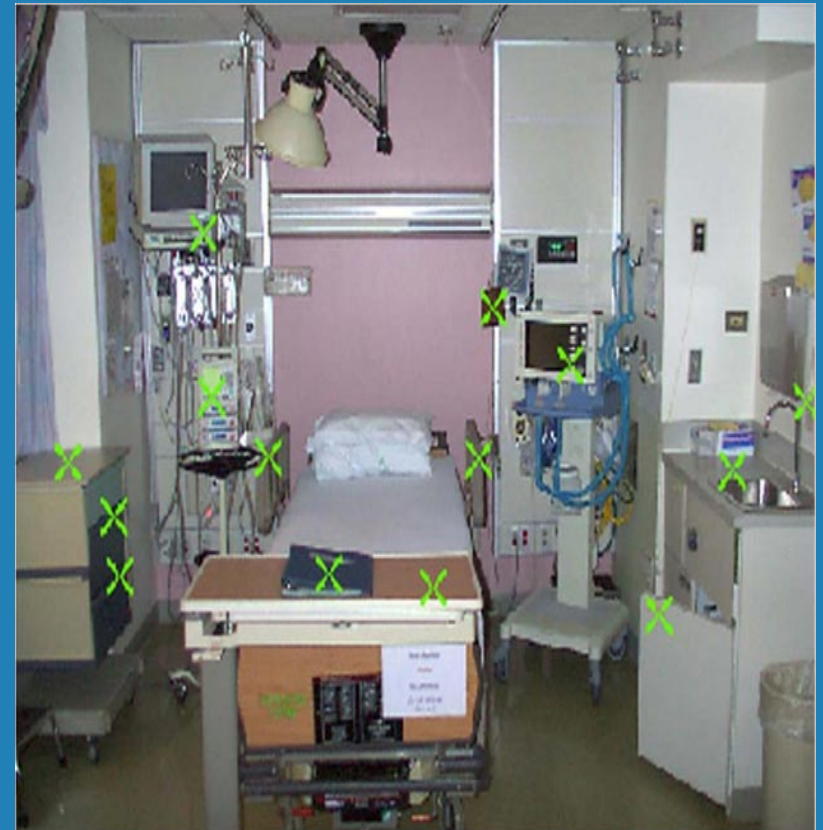
How can this happen?



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

An inanimate environment can facilitate transmission

- ∞ **Clothing, hands and environmental surfaces get contaminated during routine patient care**
- ∞ **Numerous studies show control of VRE/MRSA with contact isolation**
- ∞ **One study showed a 16 fold reduction ($P < 0.002$)**



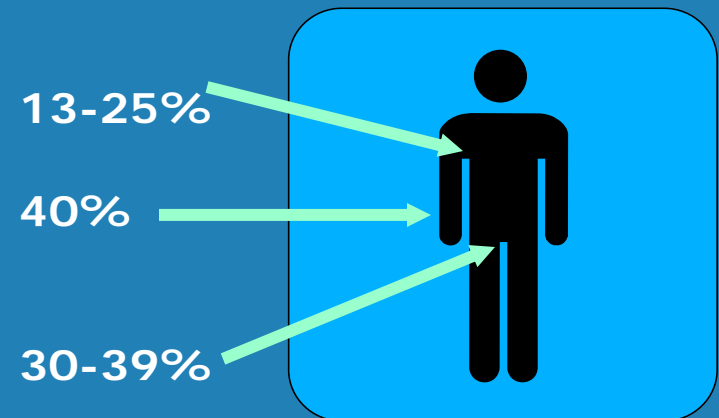
Jernigan et al. Am J Epidemiol 1996

Patients often carry resistant bacteria on their skin

Patients with resistant bacteria like methicillin-resistant *S. aureus* (MRSA) or vancomycin-resistant enterococci (VRE) often carry the organism on many areas of their skin, even when they don't have any wounds or broken skin.

The Figure shows the percent of patients with methicillin-resistant *S. aureus* (MRSA) who carry the organism on the skin under their arms, on their hands or wrists, or in the groin area.

Percent of Patients with MRSA Who Carry the Organism on Their Skin



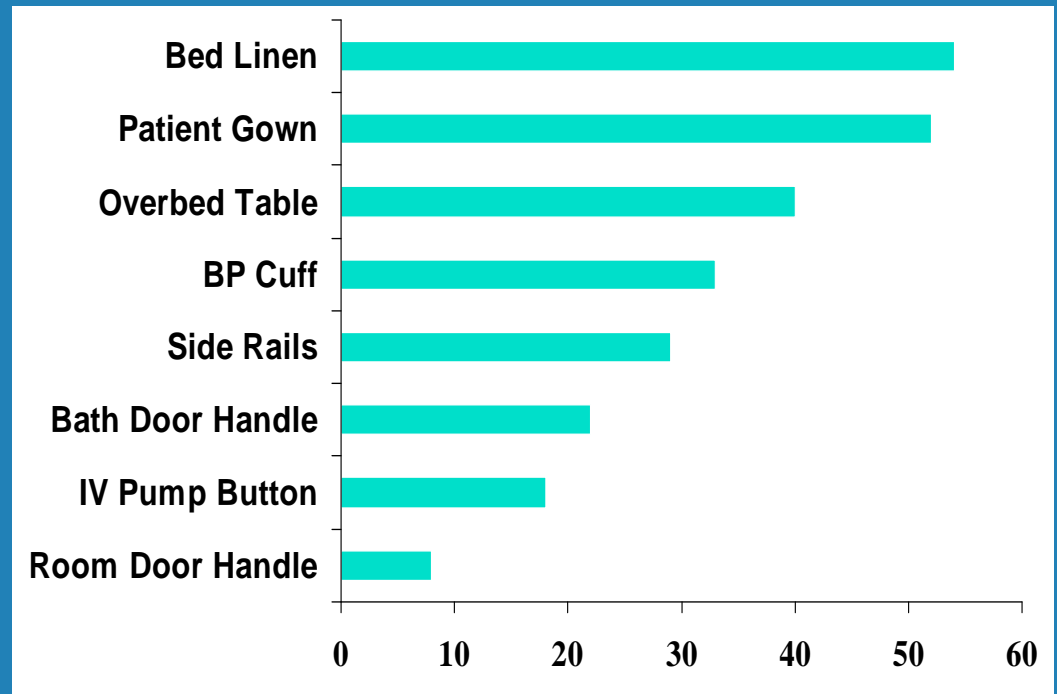
Here's another way healthcare workers contaminate their hands

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


(see chart) →

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

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



Percent of Surfaces Contaminated



How can we overcome problems associated with handwashing?

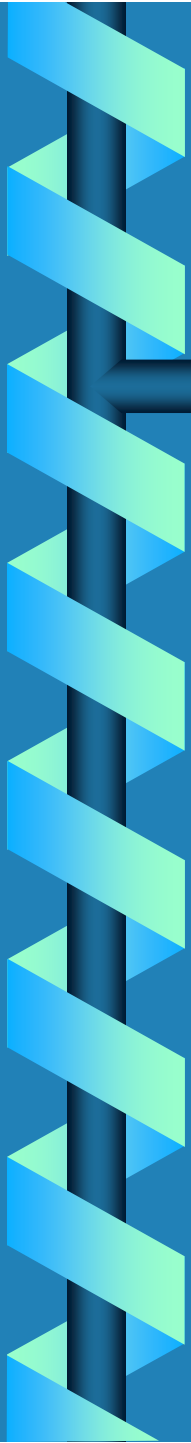
Since washing hands frequently with soap and water is

- inconvenient
- time-consuming
- often causes skin irritation and dryness

experts have suggested that hospitals, extended care facilities, and home health agencies develop new strategies for improving hand hygiene among healthcare workers.

We need to make it easier for you to clean your hands quickly, with a minimum of effort and skin irritation.

One way to accomplish these goals is to clean your hands with an alcohol-based handrub (a gel, rinse or foam).



Using an alcohol-based handrub takes less time than handwashing

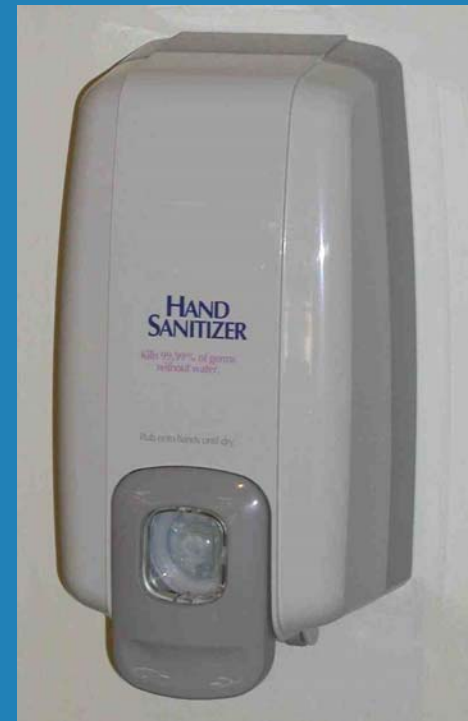
One study found it took ICU nurses an average of 62 seconds to go to a sink, wash and dry their hands, and return to patient care activities.

However, in the same hospital, it was estimated that if an alcohol-based handrub was available at each patient's bedside, it would take nurses about 15 seconds to clean their hands.

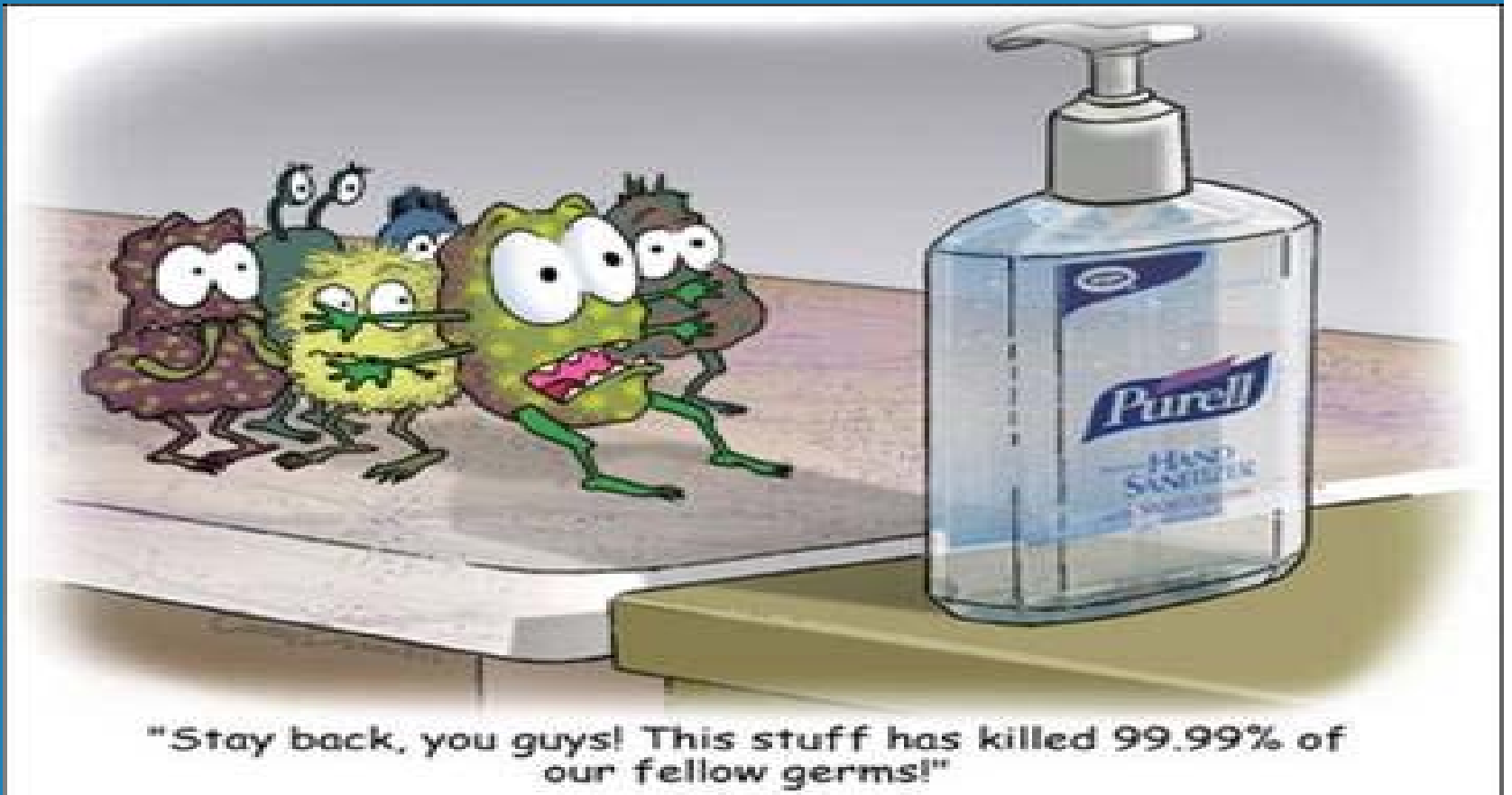
So, one of the advantages of using alcohol hand rubs is that they require much less time to use.

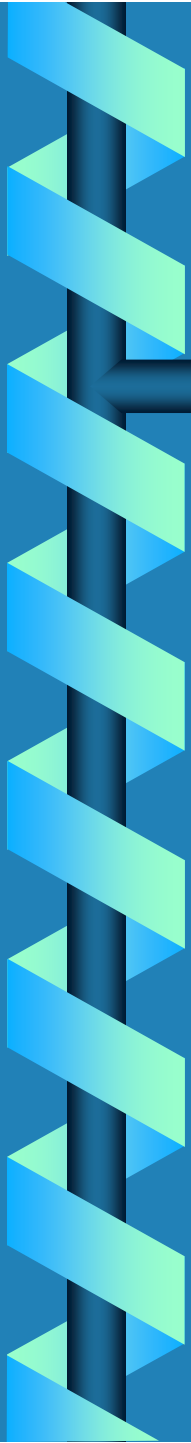
Are alcohol-based handrubs really effective?

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



Protect yourselves and your patients





Won't frequent use of alcohol dry out my skin?

No!

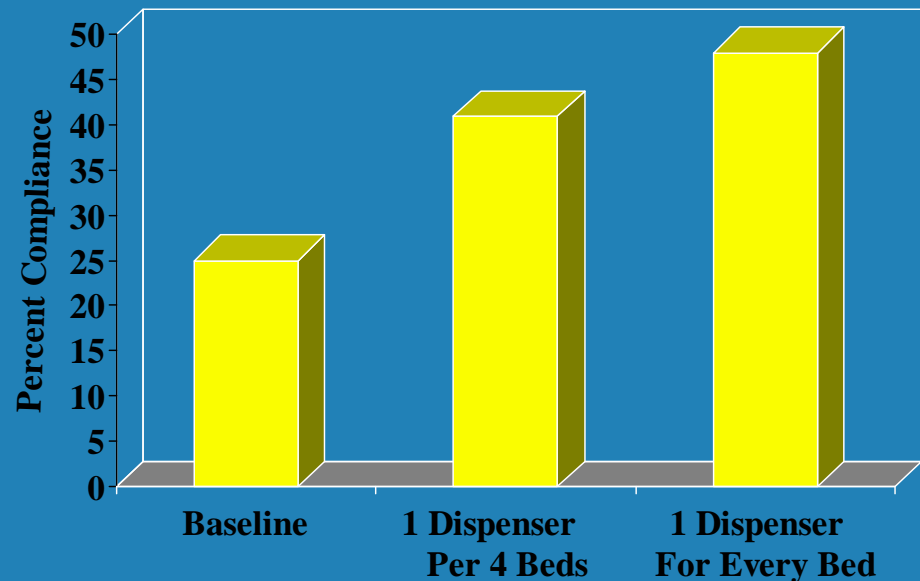
In fact, studies have proven that nurses who routinely cleaned their hands between patients by using a modern alcohol-based handrub had less skin irritation and dryness than nurses who washed their hands with soap and water.

Modern alcohol-based handrubs contain skin conditioners (emollients) that help prevent the drying effects of alcohol.

Promoting alcohol hand rubs improve hand hygiene habits

Several studies like the one shown on the right have found that when hospitals placed alcohol handrub dispensers near each patient's bed, healthcare workers cleaned their hands significantly more often than they did when only sinks were available for handwashing.

Hand Hygiene Compliance by ICU Personnel Before & After Alcohol Dispensers Were Installed Next to Every 4th Bed And Next to Every Bed






Advantages of cleaning hands with alcohol-based handrubs

When compared to traditional soap and water handwashing, alcohol handrubs have the following advantages:

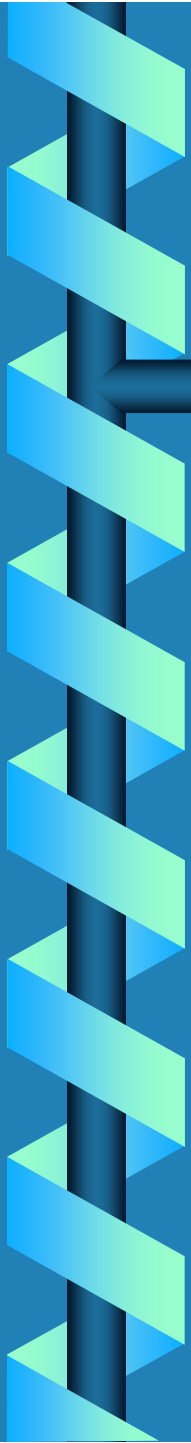
- take less time to use
- can be made more accessible than sinks
- cause less skin irritation and dryness
- are more effective in reducing the number of bacteria on hands
- makes alcohol-based handrubs readily available to personnel
- has led to improved hand hygiene practices



CDC guideline recommends frequent use of alcohol-based handrubs

For the reasons cited on previous slides, a new guideline developed by the Centers for Disease Control and Prevention (CDC) and infection control organizations recommends that healthcare workers use an alcohol-based handrub (a gel, rinse or foam) to routinely clean their hands between patient contacts, as long as hands are not dirty.

New recommendations are shown on the following slides.



When should you wash your hands with soap and water?

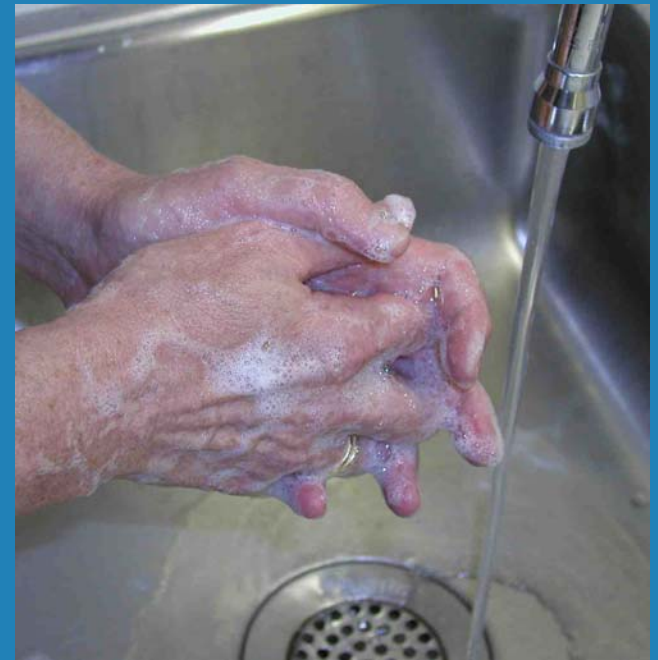
Wash your hands with plain soap and water, if:


- your hands are visibly soiled (dirty)
- hands are visibly contaminated with blood or body fluids
- before eating
- before and after using the restroom
- after removing gloves
- at the end of the shift
- touching contaminated equipment
- After caring for a patient with *Clostridium difficile* or other spore-forming bacteria

Here are some tips on how to wash your hands effectively

When washing hands with plain soap,

- wet hands first with water (avoid HOT water)
- apply 3 to 5 ml of soap to hands
- rub hands together for at least 15 seconds
- cover all surfaces of the hands, fingers and finger tips
- rinse hands with water and dry thoroughly
- use paper towel to turn off water faucet





When should you use an alcohol-based handrub?

If hands are not visibly soiled or contaminated with blood or body fluids, use an alcohol-based handrub for routinely cleaning your hands:


- 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



Here are some tips on how to use an alcohol handrub


- Apply 1.5 to 3 ml of an alcohol gel or rinse to the palm of one hand, and rub hands together
- Cover all surfaces of your hands and fingers
- Include areas around/under fingernails
- Continue rubbing hands together until alcohol dries

If you have applied a sufficient amount of alcohol hand rub, it should take at least 10 -15 seconds of rubbing before your hands feel dry.



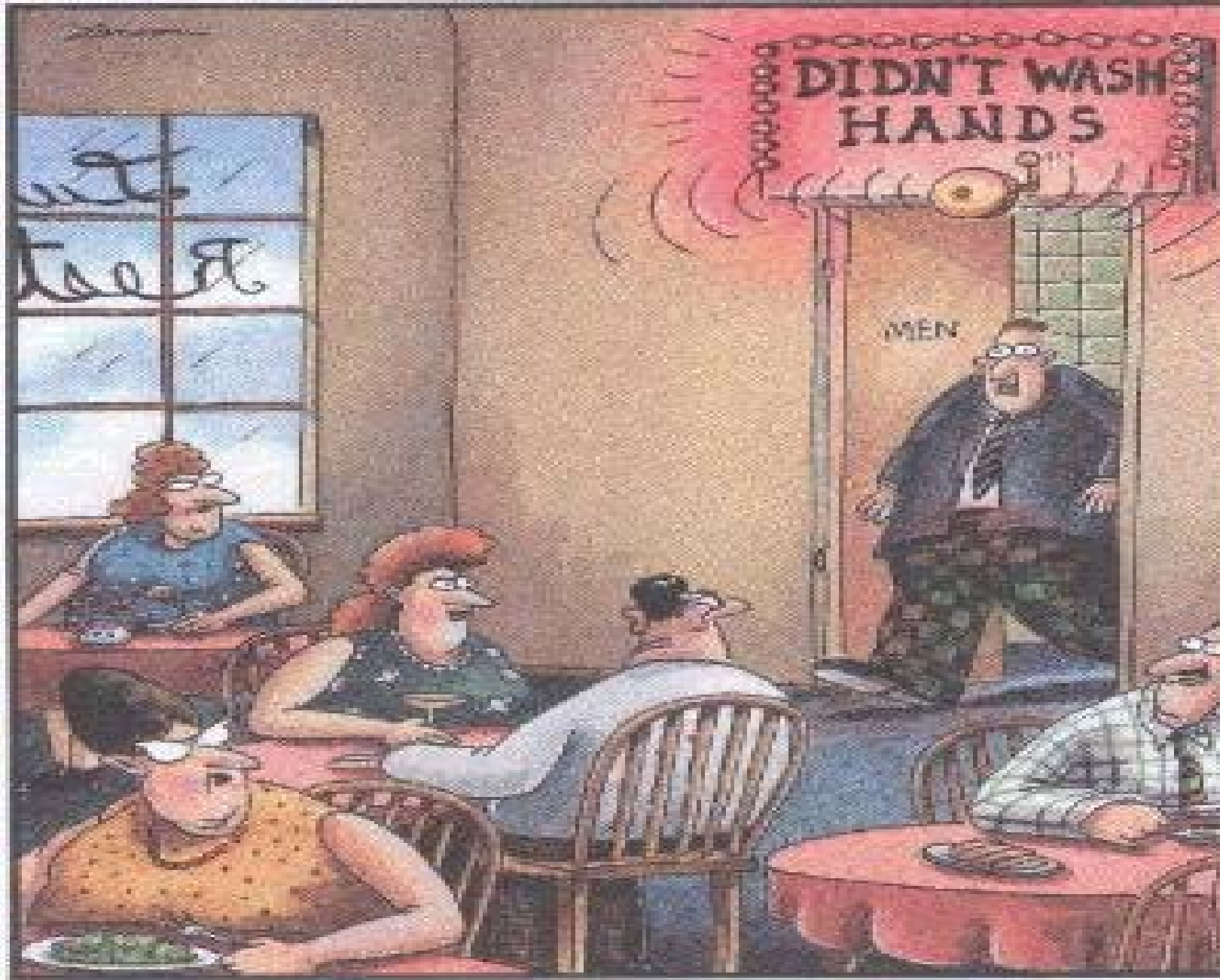
Here are some more tips on how to use an alcohol-based handrub

- If after cleaning your hands 5 to 10 times with an alcohol-based handrub, you feel a “build-up” of emollients on your hands, wash your hands with soap and water.
- If you clean your hands with an alcohol-based handrub before putting on gloves, make sure the alcohol has dried completely before putting on gloves.



You wear gloves, so your hands are really “clean” when you remove them

- ∞ WRONG...resident flora as well as transient flora can be on your hands, underneath the gloves, multiplying every 20 minutes!**
- ∞ There is variability in the integrity of gloves**
- ∞ Latex glove leakage can range from 3%-52% depending on the study**
- ∞ Vinyl glove leakage can range from 4%-64% depending on the study**



Questions ???

HANDWASHING IS THE IN THING TO DO.



- Don't spread these germs to others.
 - Wash hands often.
 - Wash after going to the bathroom.
 - Wash before eating.
- Handwashing is the single most important thing to stop spreading infection.



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