



This slide set “Hand Hygiene in Healthcare Settings-Core” and accompanying speaker notes provide an overview of the Guideline for Hand Hygiene in Healthcare Settings published in 2002.

A second slide set “Hand Hygiene in Healthcare Settings-Supplemental” which can be obtained at www.cdc.gov/handhygiene provides additional slides that may be used in conjunction with the core slide set.

The target audience for this slide set is healthcare workers in acute care hospitals.



Hand Hygiene in Healthcare Settings: An Overview



- Background
- Definitions
- Indications
- Selection of Agents
- Techniques
- Surgical
- Other



So Why All the Fuss About Hand Hygiene?

Most common mode of transmission of pathogens is via hands!

- Infections acquired in healthcare
- Spread of antimicrobial resistance



Evidence of Relationship Between Hand Hygiene and Healthcare-Associated Infections

- Substantial evidence that hand hygiene reduces the incidence of infections
- Historical study: Semmelweis
- More recent studies: rates lower when antiseptic handwashing was performed



Hand Hygiene Adherence in Hospitals



Year of Study	Adherence Rate	Hospital Area
1994 ⁽¹⁾	29%	General and ICU
1995 ⁽²⁾	41%	General
1996 ⁽³⁾	41%	ICU
1998 ⁽⁴⁾	30%	General
2000 ⁽⁵⁾	48%	General

1. Gould D, *J Hosp Infect* 1994;28:15-30. 2. Larson E, *J Hosp Infect* 1995;30:88-106. 3. Slaughter S, *Ann Intern Med* 1996;3:360-365. 4. Watanakunakorn C, *Infect Control Hosp Epidemiol* 1998;19:858-860. 5. Pittet D, *Lancet* 2000;356:1307-1312.



Self-Reported Factors for Poor Adherence with Hand Hygiene



- Handwashing agents cause irritation and dryness
- Sinks are inconveniently located/lack of sinks
- Lack of soap and paper towels
- Too busy/insufficient time
- Understaffing/overcrowding
- Patient needs take priority
- Low risk of acquiring infection from patients

Definitions



- Hand hygiene
 - Performing handwashing, antiseptic handwash, alcohol-based handrub, surgical hand hygiene/antiseptics
- Handwashing
 - Washing hands with plain soap and water
- Antiseptic handwash
 - Washing hands with water and soap or other detergents containing an antiseptic agent
- Alcohol-based handrub
 - Rubbing hands with an alcohol-containing preparation
- Surgical hand hygiene/antiseptics
 - Handwashing or using an alcohol-based handrub before operations by surgical personnel



Indications for Hand Hygiene

- When hands are visibly dirty, contaminated, or soiled, wash with non-antimicrobial or antimicrobial soap and water.
- If hands are not visibly soiled, use an alcohol-based handrub for routinely decontaminating hands.



Specific Indications for Hand Hygiene



■ Before:

- Patient contact
- Donning gloves when inserting a CVC
- Inserting urinary catheters, peripheral vascular catheters, or other invasive devices that don't require surgery

■ After:

- Contact with a patient's skin
- Contact with body fluids or excretions, non-intact skin, wound dressings
- Removing gloves



Selection of Hand Hygiene Agents: Factors to Consider



- Efficacy of antiseptic agent
- Acceptance of product by healthcare personnel
 - Characteristics of product
 - Skin irritation and dryness
- Accessibility of product
- Dispenser systems

Efficacy of Hand Hygiene Preparations in Killing Bacteria



Good

Better

Best

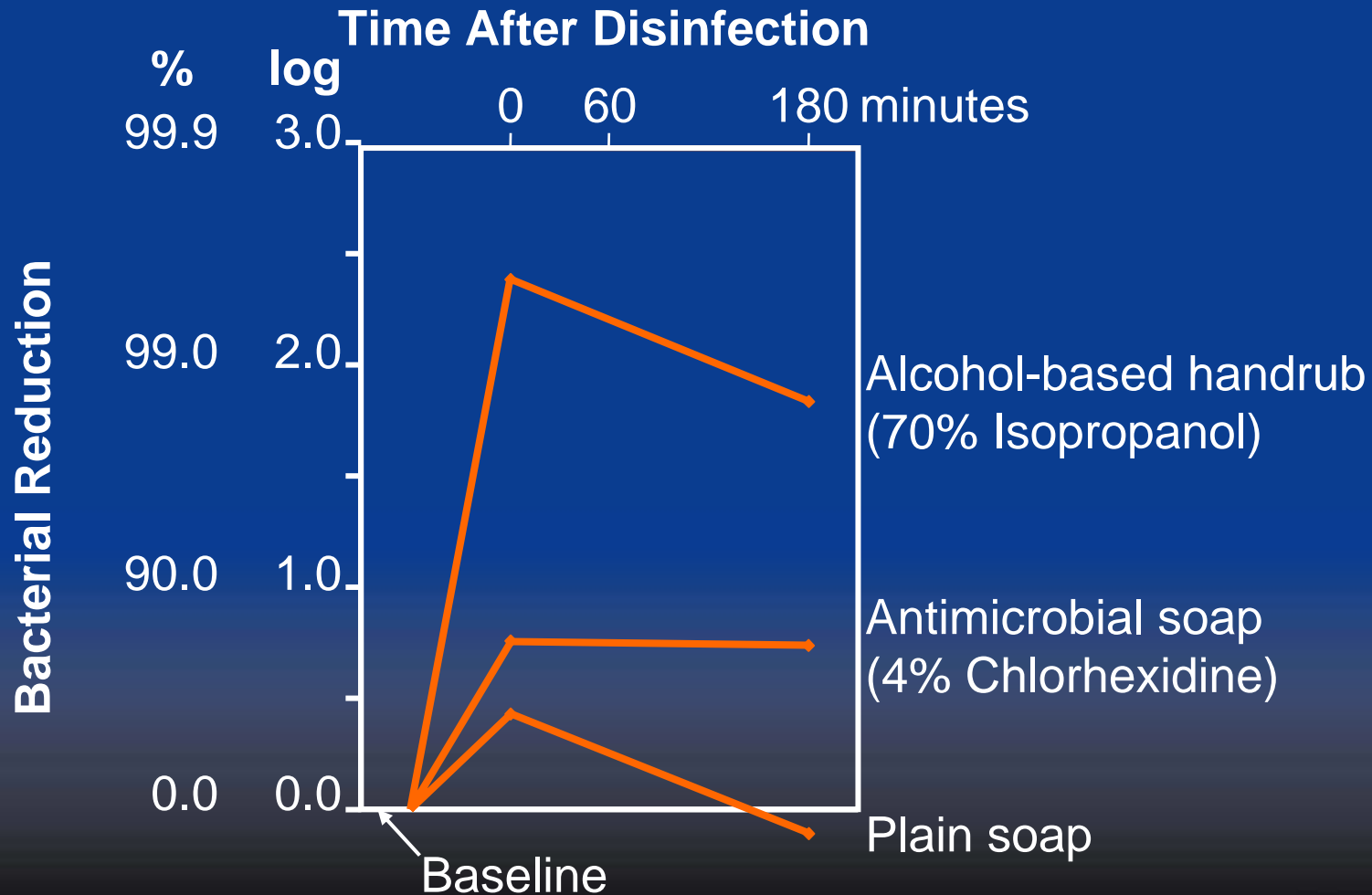


Plain Soap

**Antimicrobial
soap**

**Alcohol-based
handrub**

Ability of Hand Hygiene Agents to Reduce Bacteria on Hands

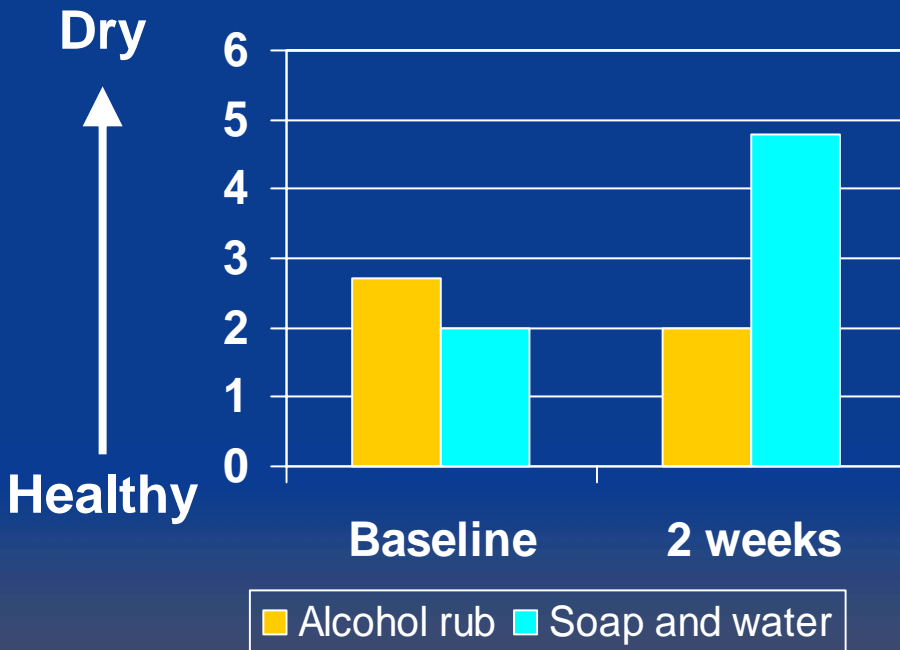


Adapted from: *Hosp Epidemiol Infect Control*, 2nd Edition, 1999.

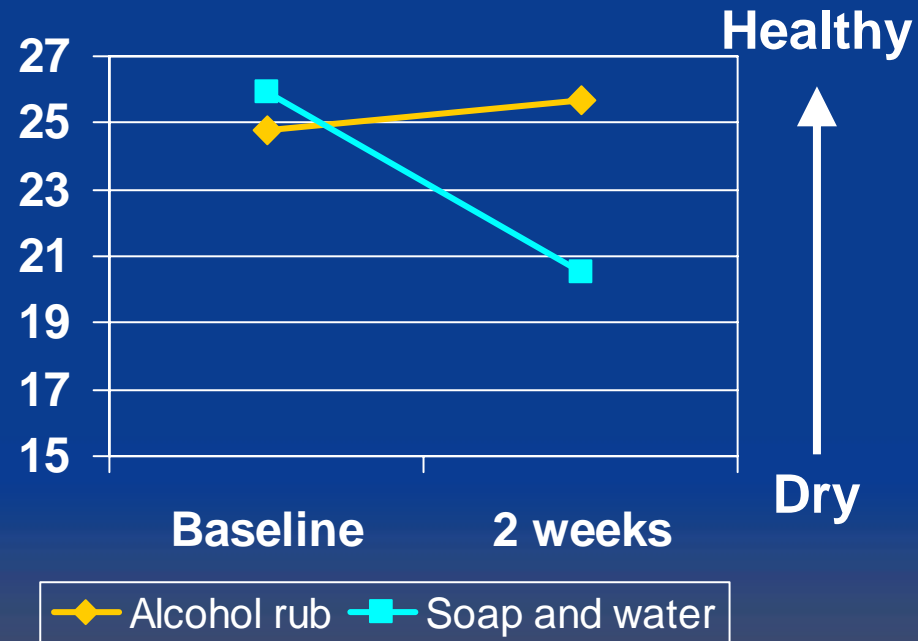
Effect of Alcohol-Based Handrubs on Skin Condition





Self-reported skin score



Epidermal water content




~ Alcohol-based handrub is less damaging to the skin ~




Time Spent Cleansing Hands: one nurse per 8 hour shift

- Hand washing with soap and water: 56 minutes
 - Based on seven (60 second) handwashing episodes per hour
 - Alcohol-based handrub: 18 minutes
 - Based on seven (20 second) handrub episodes per hour
- ~ Alcohol-based handrubs reduce time needed for hand disinfection ~**



Recommended Hand Hygiene Technique



■ Handrubs

- Apply to palm of one hand, rub hands together covering all surfaces until dry
- Volume: based on manufacturer

■ Handwashing

- Wet hands with water, apply soap, rub hands together for at least 15 seconds
- Rinse and dry with disposable towel
- Use towel to turn off faucet



Surgical Hand Hygiene/Antisepsis

- Use either an antimicrobial soap or alcohol-based handrub
- Antimicrobial soap: scrub hands and forearms for length of time recommended by manufacturer
- Alcohol-based handrub: follow manufacturer's recommendations. Before applying, pre-wash hands and forearms with non-antimicrobial soap



Infection Rates: Surgical Handscrub vs. Handrub

<u>Class of Contamination</u>	<u>No. SSI/No. Handscrub</u>	<u>Operations (%) Handrub</u>	χ^2 Test of Equivalence (p-value)
Clean	29/1485 (1.9)	32/1520 (2.1)	16.0 (<0.001)
Clean-Contaminated	24/650 (3.7)	23/732 (3.1)	1.9 (0.09)
All	53/2135 (2.5)	55/2252 (2.4)	19.5 (<0.001)



Skin Care

- Provide healthcare workers with hand lotions or creams
- Get information from manufacturers regarding effects that hand lotions, creams, or alcohol-based handrubs may have on the effectiveness of antimicrobial soaps



Fingernails and Artificial Nails

- Natural nail tips should be kept to ¼ inch in length
- Artificial nails should not be worn when having direct contact with high-risk patients (e.g., ICU, OR)



Unresolved Issues

- Routine use of *non*alcohol-based handrubs
- Wearing rings in healthcare settings



Gloving

- Wear gloves when contact with blood or other potentially infectious materials is possible
- Remove gloves after caring for a patient
- Do not wear the same pair of gloves for the care of more than one patient
- Do not wash gloves



Education/Motivation Programs

- Monitor healthcare workers (HCWs) adherence with recommended hand hygiene practices and give feedback
- Implement a multidisciplinary program to improve adherence to recommended practices
- Encourage patients and their families to remind HCWs to practice hand hygiene



Administrative Measures to Improve Hand Hygiene

- Make improved hand hygiene an institutional priority
- Place alcohol-based handrubs at entrance to patient room, or at bedside
- Provide HCWs with pocket-sized containers



Alcohol and Flammability

- Alcohols are flammable
- Alcohol-based handrubs should be stored away from high temperatures or flames
- Europe: fire incidence low
- U.S.: one report of flash fire
- Application is key: Let It Dry!



Performance Indicators



- Monitor and record adherence to hand hygiene by ward or service
- Provide feedback to healthcare workers about their performance
- Monitor the volume of alcohol-based handrub used per 1,000 patient days
- Monitor adherence to policies on wearing artificial nails



Summary

Alcohol-Based Handrubs: What benefits do they provide?

- Require less time
- More effective for standard handwashing than soap
- More accessible than sinks
- Reduce bacterial counts on hands
- Improve skin condition



PREVENTION IS PRIMARY!

*Protect patients...protect healthcare personnel...
promote quality healthcare!*

SAFER • HEALTHIER • PEOPLE™