

HAND HYGIENE: INDICATIONS AND GENERAL PRINCIPLES IN PRIMARY, COMMUNITY AND ACUTE HEALTHCARE SETTINGS

05/03/2020

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Summary

Question

What is the best available evidence regarding indications and general principles for hand hygiene in healthcare settings?

Clinical Bottom Line

Hand hygiene is the single most important factor in preventing and reducing infection and the spread of antimicrobial resistance.^{1,2} The terms hand hygiene and hand decontamination are often used interchangeably. There are two methods for undertaking hand hygiene, hand washing and hand rubbing. Hand washing refers to the washing of hands with water and plain or antimicrobial soap, whereas hand rubbing involves rubbing the hands with an alcohol-based solution without the addition of water.¹ Poor hand hygiene practices among health care professionals are strongly associated with the transmission of infections and are a major factor in the spread of antibiotic resistant organisms within hospitals.¹⁻³

- Based on the findings of experimental, clinical, or epidemiological studies, clinical practice guidelines recommend five key moments for hand hygiene that should be performed to prevent the transfer of microorganisms: 1) before direct contact with a patient, including aseptic procedures; 2) after direct contact with a patient; 3) immediately after exposure to body fluids or excretions; 4) after touching a patient's surroundings; and 5) immediately after glove removal.^{1,2} (Level 1)
- Everyone involved in the delivery of care should be educated about the principles of infection prevention and control and trained in hand decontamination and the use of personal protective equipment (PPE).¹ (Level 5)
- Patient and carers should be educated about the benefits of hand decontamination including appropriate use of handwashing and hand rubbing, correct technique and the importance of maintaining standards in healthcare.¹ (Level 5)
- During clinical work and when delivering patient care, healthcare professionals should ensure wrist and hand jewelry are removed, arms are bare from the elbow down, fingernails are short, clean, and free from false nails and nail polish, and cuts and abrasions are covered with waterproof dressings.¹ (Level 5)
- To reduce the risk of irritant contact dermatitis associated with hand hygiene, hand lotions and creams should be available to healthcare workers.² (Level 5)

HANDWASHING

- Hands should be washed with soap and water when visibly dirty or soiled with blood or bodily fluid, or after using the toilet.² (Level 5)
- Hand washing is the preferred technique for hand hygiene when exposure to potential spore forming pathogens is suspected or proven (e.g. *Clostridium difficile*).² (Level 1)
- According to techniques endorsed by clinical practice guidelines, effective handwashing involves three stages: preparation, washing and rinsing, and drying. When washing, hands should be prepared by wetting with tepid running water, liquid soap or antimicrobial preparation should be applied and the hands rubbed together vigorously, and all surface areas should be covered. Hands should then be rinsed and dried thoroughly with a disposable towel to maintain skin integrity; use the towel to turn off the faucet.^{1,2} (Level 1)
- There is limited research conducted on evaluating the efficacy and clinical impact of hand drying methods. Authors of a scoping review of the literature found several studies reported hand drying with paper towel to be the most efficient method whereas other studies reported no difference between hand drying with paper towel and the use of hand dryers. The authors reported further high-quality research in this area is needed.³ (Level 5)

HAND RUBBING

- When decontaminating hands using an alcohol-based hand rub, hands should be free of dirt and organic material before application. The hand rub solution must meet all surfaces of the hand and the hands rubbed together vigorously until the solution has evaporated and the hands are dry.^{1,2} (Level 1)

Characteristics of the Evidence

This evidence summary is based on a structured search of the literature and selected evidence-based health care databases. The evidence in this summary comes from:

- Evidence-based clinical practice guidelines.^{1,2}
 - A scoping review of the literature using a five-stage methodological framework including 21 papers.³

Best Practice Recommendations

- Healthcare professionals should perform effective hand hygiene before direct contact with a patient including aseptic procedures, after direct contact with a patient, immediately after exposure to body fluids, after touching a patient's surroundings, and immediately after glove removal. (Grade A)
- Hand hygiene should be performed using soap and water when hands are visibly dirty or soiled and when exposure to spore-forming pathogens are known or suspected to be present. (Grade A)
- Fingernails should be kept clean, short and free of artificial fingernails or jewelry. (Grade B)
- The recommended technique for appropriate hand washing involves wetting hands, applying soap and vigorously rubbing hands together to ensure all surface areas are covered, then drying hands with a single-use towel. (Grade A)
- The recommended technique of hand rubbing involves rubbing an alcohol-based solution to all surface areas of the hands until dry. (Grade A)

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Hand Hygiene in Hospitals: Alcohol-Based Solutions

References

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The author declares no conflicts of interest in accordance with International Committee of Medical Journal Editors (ICMJE) standards.

How to cite: Porritt, K.. Evidence Summary. Hand Hygiene: Indications and General Principles in Primary, Community and Acute Healthcare Settings. The Joanna Briggs Institute EBP Database, JBI@Ovid.2020; JBI19783.

For details on the method for development see Munn Z, Lockwood C, Moola S. The development and use of evidence summaries for point of care information systems: A streamlined rapid review approach. *Worldviews Evid Based Nurs*. 2015;12(3):131-8.

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