



JBI RECOMMENDED PRACTICE

Evidence-informed practice at the point of care

BASIC HAND HYGIENE: HEALTH PROFESSIONALS

05/03/2020

Equipment

- Hand-wash and/or hand-rub product dispenser
- Hand-washing solution and hand-rub (as per local policy)
- Sink/hand-washing facilities
- Single use towels/paper towel for drying hands (if handwashing)
- Emollient hand cream/lotion

Recommended Practice

GENERAL PRINCIPLES

- Hand hygiene and hand decontamination are two terms used interchangeably.
- There are two techniques to hand hygiene:
 - Hand washing, refers to the washing of hands with water and plain or antimicrobial soap
 - Hand rubbing, involves rubbing the hands with an alcohol-based solution without the addition of water
- It is important to educate patients and their families on hand hygiene best practice, and how to clean their own hands.
- Hand lotions and creams are available to health professionals to reduce the risk of irritant contact dermatitis.

INDICATIONS FOR HAND HYGIENE

- Hand hygiene should be performed:
 - Before direct contact with a patient including aseptic procedures
 - After direct contact with a patient
 - Immediately after exposure to body fluids or excretions
 - After touching a patient's surroundings
 - Immediately after glove removal
- Hand washing should be undertaken when hands are dirty or soiled.
- Hand washing is the preferred technique for hand hygiene when exposure to potential spore forming pathogens is suspected or proven (e.g. *Clostridium difficile*).

HAND WASHING WITH SOAP AND WATER

- 1) Prepare hands by ensuring:
 - a) Wrist and hand jewelry are removed
 - b) Arms are bare from the elbow down (e.g. free from clothing)
 - c) Fingernails are short, clean, and free from false nails and nail polish
 - d) Cuts and abrasions are covered with waterproof dressings
- 2) Wet hands with clean, running water.
- 3) Apply enough soap to cover all surfaces of the hand.
- 4) Wash hands for 15-30 seconds following the sequence below:
 - a) Rub hands palm to palm
 - b) Place right palm on top of left dorsum and rub together with fingers interlaced
 - c) Place left palm on top of right dorsum and rub together with fingers interlaced
 - d) Rub palm to palm to palm with fingers interlaced
 - e) Cusp backs of fingers into opposing palms and rub side to side
 - f) Clasp right hand over left thumb and rub thumb in a rotational direction
 - g) Clasp left hand over right thumb and rub thumb in a rotational direction
 - h) Place finger tips of right hand into left palm and rub in a circular direction
 - i) Place finger tips of left hand into right palm and rub in a circular direction

Evidence-informed practice at the point of care

- 5) Rinse hands under running water. Avoid using hot water to prevent drying of skin.
- 6) Dry hands thoroughly using a single use towel.
- 7) Use the towel to turn off the faucet.
- 8) Hands are clean and dry and safe to undertake a task.

HAND RUBBING WITH ALCOHOL SOLUTION

- 1) Alcohol-based hand rub should only be used when hands are free of dirt and organic material.
- 2) Alcohol-based hand-rub should be kept as close as practical to the patient in all healthcare facilities.
- 3) Prepare hands by ensuring:
 - a) Wrist and hand jewelry are removed
 - b) Arms are bare from the elbow down (e.g. free from clothing)
 - c) Fingernails are short, clean, and free from false nails and nail polish
 - d) Cuts and abrasions are covered with waterproof dressings
- 4) Apply, into a cupped hand, enough alcohol solution to cover entire hands.
- 5) Rub hands together vigorously for 15-30 seconds following the sequence below:
 - a) Rub hands palm to palm
 - b) Place right palm on top of left dorsum and rub together with fingers interlaced
 - c) Place left palm on top of right dorsum and rub together with fingers interlaced
 - d) Rub palm to palm to palm with fingers interlaced
 - e) Cusp backs of fingers into opposing palms and rub side to side
 - f) Clasp right hand over left thumb and rub thumb in a rotational direction
 - g) Clasp left hand over right thumb and rub thumb in a rotational direction
 - h) Place finger tips of right hand into left palm and rub in a circular direction
 - i) Place finger tips of left hand into right palm and rub in a circular direction
- 6) Wait for hands to dry completely.
- 7) Once hands are dry, hands are considered clean and safe to undertake a task.

Supporting Evidence

Kylie Porritt BN, GradDipNursSc(Cardiac), MNsc, PhD. 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.

OCCUPATIONAL HEALTH AND SAFETY CONSIDERATIONS



**Hand washing
required at all
times**



**Patient
education
required**



ATTENTION!
Use standard
precautions

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.

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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, rinsing, 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)

SEE RELATED EVIDENCE SUMMARIES:

Hand Hygiene in Hospitals: Alcohol-Based Solutions

References

1. National Institute for Health and Care Excellence (NICE). Healthcare-associated infections: prevention and control in primary and community care. Clinical guidelines [CG139]. 2017 (updated version of guideline published in 2012).
2. Pittet D, Allegranzi B, Boyce J. The World Health Organization Guidelines on hand hygiene in health care and their consensus recommendations. *Infect Control Hosp Epidemiol*. 2009;30(7):611-22.
3. Gammon J, Hunt J. The neglected element of hand hygiene - significance of hand drying, efficiency of different methods and clinical implication: A review. *J Infect Prev*. 2019; 20(2):66-74.

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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