Hand hygiene, neonatal

Reviewed: August 19, 2021

Critical Notes!

Facility specific:

Non-sterile gloves should be worn at all times during patient care or when handling patient-related equipment and supplies, unless patient contact necessitates use of sterile gloves.

All personnel must perform appropriate hand hygiene in the following situation:

1. Before and after direct contact with patients or patient-related equipment and belongings (i.e., touching patients, patient-related supplies, etc.)
2. Before any invasive procedures.
3. Before donning and after removing gloves.
4. During patient care, when moving from a contaminated body site to a clean body site.
5. Before and after eating.
6. Before (Upon) entering and after leaving the patient care area.
7. After using the restroom.

Artificial nails, tips, wraps, appliqués, acrylics, gels, any additional items applied to the nail surface, and long natural nails are not worn by health care workers when assigned to patient care activities

Use hospital approved hand lotion to prevent skin irritation:

1. Lotions can become contaminated and support bacterial growth and should be dispensed in individual-use containers or from pump dispensers that are not opened or refilled.
2. Lotions that contain petroleum or other oil emollients may affect the integrity of gloves. Use the hospital approved lotion provided for you, as it is compatible with the hand hygiene products.
3. Lotions used should be hospital provided. If special lotions are needed, approval must be obtained from Employee Health and Infection Prevention.

Performed by: RN, NT, NCT, RN, OT/PT, MD, NNP

Introduction

Hands are conduits for transfer of potential pathogens from one patient to another, from a contaminated object to the patient, or from a staff member to the patient. The Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) use the general term hand hygiene to refer to hand washing, antiseptic hand wash, antiseptic hand rub, or surgical hand asepsis.1,2

Hand hygiene is the single most important procedure you can perform to prevent the spread of infection. Hand hygiene is especially important for preventing hospital-associated infections in the neonatal intensive care unit (NICU).1,3,4,5

A fragile integumentary system and an underdeveloped immune system place neonates at risk for infection. Moreover, studies show that a neonate’s risk of infection may increase with low birth weight, inadequate bed space in the NICU, understaffing, prolonged hospitalization, frequent staff contact, multiple invasive procedures, and mechanical ventilation.

Perform hand hygiene routinely and thoroughly before entering the NICU and before and after contact with the neonate or the neonate’s environment.5

Studies have shown that NICU staff members who used an alcohol-based hand hygiene product were significantly more likely to touch neonates with clean hands than those using an antiseptic detergent. Researchers believe that this is because alcohol-based hand hygiene products are more readily available in the unit, are easier to use, and are less drying and irritating to the hands than hand washing with an antiseptic detergent and water.6

Current best practices for hand hygiene include using an alcohol-based hand rub for decontaminating your hands before direct contact with a neonate; before putting on and after removing your gloves; before inserting an invasive device; after contact with the neonate; when moving from a contaminated body site to a clean body site during care; if your hands aren’t visibly soiled, after contact with body fluids or excretions, mucous membranes, nonintact skin, and wound dressings; and after
contact with inanimate objects in the neonate's environment. You must wash your hands with soap and water when your hands are visibly soiled or contaminated with blood or other body fluids, when you suspect or know that you've been exposed to potential spore-forming pathogens (for example, Clostridioides difficile or Bacillus anthracis), and after using the restroom.

Clean, healthy hands with intact skin and nail beds; short, unpolished fingernails; and no hand or wrist jewelry may minimize a neonate's risk of contamination. You shouldn't wear artificial nails because of their high potential to serve as a reservoir for microorganisms.

**Equipment**

**Hand washing**
- Warm or cold water
- Soap
- Paper towels

**Hand sanitizing**
- Alcohol-based hand rub

**Implementation**

- Remove all hand jewelry, if required by your facility, because hand jewelry harbors dirt and skin microorganisms. Remove your watch and any bracelets. Note: Keep nail polish in good repair to minimize its potential to harbor microorganisms. Keep natural nails short (less than ¼” [0.6 cm]).

**Hand washing**

- Wet your hands and wrists with warm or cold (not hot) water and apply soap from a dispenser. Don't use bar soap, because it allows for cross-contamination. Hold your hands below elbow level to prevent water from running up your arms and back down, thus contaminating clean areas. (See Proper hand-washing technique.)
- Rub your hands vigorously for at least 20 seconds, creating a generous lather.
- Pay special attention to the area under your fingernails and around your cuticles as well as the thumbs, knuckles, and sides of your fingers and hands, because microorganisms thrive in these protected or overlooked areas. If you don't remove your wedding band, move it up and down your finger while washing your hands to clean beneath it. Avoid splashing water on yourself or the floor, because microorganisms spread more easily on wet surfaces and slippery floors are dangerous. Avoid touching the sink or faucets, because they're considered contaminated.
- Rinse your hands and wrists well under clean, running water, because running water flushes suds, soil, and microorganisms away.
- Pat your hands and wrists dry with a paper towel. Avoid rubbing them dry, which can cause abrasion and chapping.
- If the sink isn't equipped with hands-free knee or foot controls, turn off the faucets by gripping them with a dry paper towel to avoid recontaminating your hands.

**PROPER HAND-WASHING TECHNIQUE**

To minimize the spread of infection, follow these basic hand-washing instructions.

With your hands angled downward under the faucet (as shown below), adjust the water temperature until it's comfortable (warm or cold).
Work up a generous lather by scrubbing vigorously for at least 20 seconds. Be sure to clean beneath your fingernails, around your knuckles, and along the sides of your fingers and hands (as shown below).

Rinse your hands completely to wash away suds and microorganisms. Pat dry with a paper towel. To prevent recontaminating your hands on the faucet handles, cover each one with a dry paper towel when turning off the water (as shown below).

Hand sanitizing
- Apply an alcohol-based hand rub to the palm of one hand and then rub your hands together to completely cover all surfaces of the hands.

- Continue to rub your hands together until the product dries (usually 20 to 30 seconds).

### Special Considerations

- Facilities commonly require initial hand washing and scrubbing before entering the NICU to include scrubbing the hands and arms thoroughly with an antiseptic soap to a point above the elbow. Recommendations vary regarding the length of time necessary for performing the procedure.

- According to WHO hand hygiene guidelines, all rings and other jewelry should be removed before providing care in high-risk settings.

- Before participating in a sterile procedure or whenever your hands are grossly contaminated, scrub your forearms thoroughly to a point above the elbow in addition to your hands and clean under your fingernails and in and around your cuticles. Brushes, metal files, or other hard objects may injure your skin and, if reused, may be a source of contamination.

- CDC hand hygiene guidelines recommend that artificial nails or extenders shouldn't be worn when you have direct contact with patients at high risk for acquiring infections, such as those in intensive care or transplant units. WHO guidelines on hand hygiene in health care recommend that artificial nails or extenders shouldn't be worn when you have direct contact with any patients.

- To prevent your hands from becoming dry or chapped, apply an emollient hand cream after each washing or switch to a different cleaning agent. Make sure that the hand cream or lotion you use won't cause the material in your gloves to deteriorate. If you develop dermatitis, you may need to have your employee health care practitioner evaluate your skin to determine whether you should continue to work until the condition resolves. Hands with dermatitis are more susceptible to becoming colonized with transient bacteria.

- Keep in mind that gloved use doesn't eliminate the need for hand hygiene.

- According to the CDC, the temperature of the water for handwashing doesn't affect the removal of microorganisms; however, warm water may lead to skin irritation.

- Teach the parents or guardians about the importance of hand hygiene in preventing the spread of infection, and encourage them to remind health care workers to perform hand hygiene when necessary.

### Patient Teaching

Provide the parents or guardians with information about the importance of hand hygiene in preventing the spread of infection. Teach them proper technique for hand hygiene at home.

### Complications

Hand washing strips the skin of natural oils and can result in dryness, cracking, and irritation; however, these effects are probably more common after repeated use of antiseptic cleaning agents, especially in people with sensitive skin. To minimize irritation, rinse your hands thoroughly after washing, making sure that they're free from residue.

### Documentation

Neonatal hand hygiene requires no special documentation.

### References

(Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions)


15. DNV GL-Healthcare USA, Inc. (2020). IC.1.SR.1. NIAHO® accreditation requirements: Interpretive guidelines and surveyor guidance – revision 20.0. (Level VII)

Additional References


Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions

The following leveling system is from Evidence-Based Practice in Nursing and Healthcare: A Guide to Best Practice (2nd ed.) by Bernadette Mazurek Melnyk and Ellen Fineout-Overholt.

Level I: Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials (RCTs)

Level II: Evidence obtained from well-designed RCTs

Level III: Evidence obtained from well-designed controlled trials without randomization

Level IV: Evidence from well-designed case-control and cohort studies

Level V: Evidence from systematic reviews of descriptive and qualitative studies

Level VI: Evidence from single descriptive or qualitative studies

Level VII: Evidence from the opinion of authorities and/or reports of expert committees
