IPAC CANADA PRACTICE RECOMMENDATIONS
Hand Hygiene in Health Care Settings

"*Adherence to hand hygiene recommendations is the single most important practice for preventing the transmission of microorganisms in health care and directly contributes to patient safety*".(1) Professional, federal, provincial and territorial occupational health and safety recommendations, as well as regulations and legislation regarding hand hygiene, should be followed.[1]

DEVELOPED BY:

IPAC Canada's Standards and Guidelines Committee
June 2017

Reviewed October 2022

Guiding Principles:

- Effective hand hygiene is an individual and an institutional priority. "*A multifaceted, multidisciplinary hand hygiene program must be implemented in all health care settings*." [2-4] Barriers to performing hand hygiene shall be addressed.
- Hand hygiene may be performed either by using plain soap and running water, or with alcohol-based hand rubs (ABHR).[1-3,5] Antimicrobial, or antiseptic, soap should not be used for routine hand hygiene but may be used under specific circumstances including before a surgical procedure.
- ABHR hand rubs/gels/rinses are the preferred method of hand hygiene. If visibly soiled, exposed to diarrhea and/or emesis, after using the washroom and before/after handling food, wash hands with soap and running water. [2,6]
- Careful selection of products used for hand hygiene practice (e.g., ABHR, soaps, lotions, paper towels) has a significant impact on hand hygiene compliance.[2]
- Assessment of workflow and correct placement of products increases hand hygiene compliance. Hand hygiene products should be available at point of use, including but not limited to: point-of-patient-care, nursing stations, medication carts, patient room entrances, multi-use devices (e.g. computers), entrances to facilities and units, break areas and public areas (e.g. cafeterias).
- Health care settings should develop a proactive skin care program to keep hands healthy and to support optimal hand hygiene.
- Hand hygiene education programs should be ongoing and include indications for hand hygiene, factors that influence hand hygiene, hand hygiene products, hand hygiene techniques, hand care to promote skin integrity, and human factors in relation to the environment.[7]
- The use of champions or role models has been shown to improve hand hygiene practices.

- National Fire Code, and local fire regulations, for ABHR placement and storage shall be adhered to.
- Patient[1] engagement in the hand hygiene program should be included.
- Audits of hand hygiene adherence with feedback lead to improved hand hygiene compliance.
- Containers (ABHR, soap, lotion) shall not be topped up.

Infection Prevention and Control Practice Recommendations for Hand Hygiene in Health Care Settings

1. Alcohol-based hand rubs (ABHR)/gels/rinses

- Hands must be visibly clean. An adequate amount of ABHR is applied to hands and , continuously rubbed on all surfaces of hands until dry (15-20 seconds).[8] ABHR shall have alcohol concentrations of 60% to 90%.[(1,8-14)] Depending on formulation, pathogen present, jurisdiction and setting, 70% may be preferred, especially in health care settings.[8-17]
- Organizations should complete a risk assessment to determine the most appropriate placement of ABHR in every facility and provide ABHR at point-of-care so it is easily accessible for appropriate use.
- Locked, tamper-proof containers should be used to secure the product in place.
- ABHR is preferred to antimicrobial soap in critical care settings such as intensive care and burn units and before performing aseptic procedures. While antimicrobial soap may be equivalent to ABHR in terms of microorganism reduction, it is harsher on the hands, more time-consuming to use, and may contribute to antimicrobial resistance.[1,2,18]
- There is insufficient evidence for the efficacy of non-alcoholic, waterless antiseptic agents in the health care environment and therefore they are not recommended for use in health care settings.[1,2,13,19-21]

2. Hand washing with soap and water

- Lather all surfaces of the hands with soap and warm running water for 15-20 seconds.[2] Hands should be rinsed and thoroughly patted dry. To avoid recontamination of the hands, no touch techniques should be used (e.g., turn off taps with a paper towel).
- To prevent contamination of container and product, soap containers should be used until empty and then discarded.
- Routine use of antimicrobial soap for hand hygiene may contribute to antimicrobial resistance.[2] Plain soap is adequate.
- Bar soap should not be used for hand hygiene except for single patient use.

3. Surgical hand preparation:

In an operative setting, surgical hand rub containing alcohol and with persistent antimicrobial activity should be used for surgical hand preparation.[2,22]

[1] Note: In this document, patient refers to client/patient/resident

4. Other considerations:

- Short-sleeved clothing should be worn or sleeves should be pushed/rolled up to prevent them from getting wet.
- Hand and wrist jewellery should be avoided. Rings have been shown to increase the number of microorganisms on hands and increase the risk of tears in gloves.[23]
- Fingernails should be natural and kept short and clean.
- Direct care providers and others*should not wear nail polish including shellac. Studies have shown that chipped nail polish or nail polish worn longer than four days can harbour microorganisms that are not removed by hand washing, even with surgical hand scrubs[2], and effective monitoring is not possible.
- Health care workers (HCW) providing patient care and others* should not wear artificial nails or nail enhancements/nail art, including but not limited to acrylic gel nails and wraps. These have been associated with increased glove tears, transfer of microorganisms, and outbreaks of infection.[2]

*Recommendations concerning nails, nail polish, and hand and wrist jewelry should apply to all health care workers whose work involves the 4 Moments for Hand Hygiene including, but not limited to those who:

- Provide direct patient care
- Reprocess or handle surgical linens, or medical devices and supplies
- Prepare medications
- Handle food
- Perform laboratory duties or
- Have direct contact with patients or their immediate environment (includes all areas of a patient care unit)

- The ability to perform hand hygiene may be compromised by the presence of casts, dressings, splints, and skin sensitivity to hand hygiene products. In these cases, alternate product selection or job responsibilities may require review.
- To avoid confusion, ABHR dispensers should not be placed near hand washing sinks.
- In areas where ABHR dispensers cannot be wall-mounted due to safety risks (e.g., ingestion, fire) portable, pocket-sized bottles should be made available for healthcare workers

5. Skin care

Hand lotions or creams should be provided to minimize skin irritation or breakdown associated with hand hygiene.

To be effective, skin care products should be used regularly. Health care facilities should develop a proactive program to keep hands healthy so hand hygiene can be optimal. Engaging HCWs and Occupational Health experts in design of a program has been shown to increase its effectiveness.[4]

Key components of a skin care program should include:

- Provide efficacious skin care products and barrier creams that do not interfere with the persistent antimicrobial effect of the hand hygiene agent being used.

- Use products that do not have adverse effects on gloves.
- Position skin care products as close as possible to areas where hand hygiene is performed.
- Use dispensers of sufficient quality that they will not clog or leak.
- Use dispensers that can be easily flagged for disposal when empty.
- Place dispensers to minimize splashing or dripping onto adjacent wall and floor surfaces.
- There is no statistically significant difference in microbe removal based on water temperature; however, use of luke-warm water may cause less skin irritation and increase compliance[24].

6. Indications for when to perform hand hygiene in healthcare settings

The "4 Moments for Hand Hygiene" should be used for training and auditing purposes in all health care settings[2]

- Before initial patient/patient environment contact
- Before aseptic procedure
- After body fluid exposure risk
- After patient/patient environment contact

Also, clean hands:

- Before putting on gloves.
- Before clean procedures such as preparing, handling, or serving food or medications to a patient.
- After risk of contact with blood, body fluids, secretions, and excretions of patient, even if gloves are worn.
- Immediately after removing gloves, before moving to another activity, including when moving from a contaminated body site to a clean body site during care delivery.
- After performing personal functions such as blowing your nose or using the toilet.
- Any time hands are visibly soiled.
- Whenever in doubt.

7. After caring for a patient with *Clostridioides difficile* infection (CDI)

As alcohol does not kill spores, soap and running water are theoretically more effective at removing spores than ABHR. However, HCWs use gloves when providing personal care to patients with diarrhea, and Contact Precautions for patients with CDI. Gloves reduce the risk of hand contamination and have been shown to reduce the risk of transmission of CDI; never the less, it is important to ensure that hands are cleaned after all care.[1,15-17]

- HCWs should wash hands with soap and water after glove removal if a dedicated staff hand washing sink is immediately available.
- Hand hygiene should not be carried out at a patient sink, as this may re-contaminate the HCW's hands.
- Hands should be cleaned using ABHR after glove removal, if a dedicated staff hand washing sink is not immediately available.

- Patients and visitors should be provided education on when and how to perform hand hygiene. Patients who are unable to perform hand hygiene independently should be assisted by the HCW or other support person.

8. Risk of fire related to use of ABHR

- Care should be taken to ensure hands are completely dry after use of ABHR and before touching the patient/environment to eliminate the "*extremely rare risk of flammability in the presence of an oxygen-enriched environment or static electricity from carpeting*".[2,25]
- Organizations shall adhere to local fire regulations.

9. Education

Providing hand hygiene education supports good hand hygiene practices and compliance.[2]

- HCW hand hygiene education should be provided, at minimum, upon hire and routinely thereafter.[2]
- Hand hygiene education should also be provided to patients, volunteers and visitors to the health care facility in partnership with HCWs.[2]

Education pertaining to hand hygiene should include, at minimum, the following topics: [1-5]

- Indications for hand hygiene
- Factors that adversely impact hand hygiene including human factors engineering and behavioural change (environmental, social, and behavioural determinants)[7]
- Products used for hand hygiene
- Hand hygiene techniques
- Caring for hands to promote skin integrity

A variety of educational tools such as: pamphlets, posters, and fact sheets should be considered when developing educational materials.[2]

10. Monitoring / Auditing

- Hand hygiene adherence should be routinely monitored with timely feedback by using a reliable, validated observer audit tool, e.g., IPAC Canada's Hand Hygiene Audit Tool (ref: https://ipac-canada.org/tools), and training process
- Audit compliance results should be shared with all stakeholders (internal and external)[1-4]
- Audit results should be used to inform quality improvement plans and to provide real-time action to improve performance
- Audits should include not only HCWs but also other people who are routinely in the facility (e.g., volunteers, visitors, non-HCW employees, physicians)
- Measures such as tracking amount of hand hygiene product use and using products (e.g., UV fluorescent lotion) to assess quality of hand hygiene may also be considered as part of the monitoring program.[2]
- Electronic monitoring systems can be well tolerated by staff and may be more accurate than manual audits despite some limitations. Electronic and manual audit have complementary strengths.[23, 25-28]

Glossary:

As per the Canadian Standard Association (CSA):
"SHALL" is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard;
"SHOULD" is used to express a recommendation or that which is advised but not required; and
"MAY" is used to express an option or that which is permissible within the limits of the standard, an advisory or optional statement.

Published

TBD

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Hand Hygiene Resources

Visit IPAC Canada's Hand Hygiene Resources web page. Available at: http://www.ipac-canada.org/links_handhygiene.php.

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