3. THE 4 MOMENTS OF HYGIENE

3.1. MOMENT 1: BEFORE INITIAL PATIENT/RESIDENT/CLIENT (P/R/C) CONTACT OR P/R/C ENVIRONMENT CONTACT

WHEN? ***Clean your hands when entering a P/R/C environment***

Examples include but are not limited to:

- **Before entering** the P/R/C room/bed-space/home, treatment/exam room
- **Before touching** P/R/C (e.g., shaking their hand, helping them move around)
- **Before touching any object** or furniture in the P/R/C's environment (e.g., stretchers, wheelchairs, infusion rate adjustment, silencing a pump).

WHY? ***To protect the P/R/C and their environment from harmful microorganisms (germs) carried on your hands***

3.2. MOMENT 2: BEFORE ASEPTIC/CLEAN PROCEDURES

WHEN? ***Clean your hands immediately before any aseptic procedure***

Examples include but are not limited to:

- Performing invasive procedures
- Handling dressings or touching open wounds
- Preparing and administering medications
- Preparing, handling, serving or eating food
- Feeding a P/R/C
- Before and after shifts and breaks

WHY? ***To protect the patient/resident/client from harmful microorganisms, including a P/R/C's own microorganisms, entering his or her body***

Consideration should be given to communal staff rooms and foods. ABHR should be available and items should be individually packaged or distributed in a controlled manner (i.e., supervised, using tongs, appropriate hand hygiene, etc.)

3.3. MOMENT 3: AFTER BODY FLUID EXPOSURE RISK

WHEN? ***Clean your hands immediately after an exposure risk to blood and body fluids, non-intact skin, and/or mucous membranes (and after glove removal)***

Examples include but are not limited to:

- Contact with blood and body fluids
- Contact with items known or considered to be contaminated
- Procedures on the same P/R/C where soiling of hands is likely, to avoid cross-contamination of body sites
- Oral care, wound care, patient/resident/client toileting
- Removal of gloves
- Personal use of toilet or wiping nose/face
- Feeding a P/R/C
- Before and after shifts and breaks.

WHY? ***To protect yourself and the healthcare (external) environment from harmful patient/resident/client microorganisms***

3.4. MOMENT 4: AFTER PATIENT/RESIDENT/CLIENT CONTACT OR PATIENT/RESIDENT/CLIENT ENVIRONMENT CONTACT

WHEN? ***Clean your hands when leaving the P/R/C, and/or P/R/C environment***

Examples include but are not limited to:

- **After touching P/R/C** to assist with any tasks (e.g., helping a patient/resident/client mobilize; giving a massage; taking a pulse, blood pressure, chest auscultation, abdominal palpation)
- After touching any object or furniture in the P/R/C's environment (e.g., changing bed linen, infusion rate adjustment, alarm monitoring, clearing the bedside or overbed table)
- When leaving a patient/resident/client's home.

WHY? ***To protect yourself and the healthcare (external) environment from harmful patient/resident/client microorganisms***

Hand hygiene with point of care alcohol based hand rub (ABHR) is the standard of care expected of all staff, in all healthcare settings. Busy staff need access to hand hygiene products anywhere care is provided to a P/R/C or contact with their environment is taking place (from the ICU to the community outreach clinic). Making ABHR available at the point of care (e.g., within arm's reach) is an important system support to improve hand hygiene. This enables staff to quickly and easily follow the 4 Moments for Hand Hygiene.

Point of care ABHR can be achieved with a variety of methods (e.g., ABHR attached to the bed, wall, containers carried by the healthcare worker [HCW]). Sites/programs shall 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. To avoid confusion, ABHR dispensers should not be placed near hand washing sinks.

Two moments for hand hygiene may sometimes fall together. Typically, this occurs when going from one P/R/C to another without touching any surfaces when moving from one P/C/R zone to another. Naturally, a single hand hygiene action will cover the two moments for hand hygiene.

For example: Performing HH after touching a P/R/C (Moment 4) would also cover doing HH before touching another P/R/C (Moment 1). Two Moments are covered by performing HH once.

3.5. HAND HYGIENE TECHNIQUES

- Remove hand and arm jewelry as these items are hard to clean and prevent the removal of microorganisms from surfaces of the hands and wrists they cover13.3
- If a watch is worn, it must be worn above the wrist and fit snugly
- Avoid long sleeves. Clothing or other items that impede frequent and effective hand hygiene should be removed.

3.5.1. Using an Alcohol-Based Hand Rub (ABHR)

- Ensure hands are visibly clean (if soiled, follow hand washing steps)
- Apply one to two full pumps of product (about 1.1 - 2.0 ml) onto one palm; the volume should be enough so that 15 seconds of rubbing is required for drying (13.12)
- Rub product over all surfaces of hands, concentrating on finger tips, between fingers, back of hands, wrists and base of thumbs; these are the

most commonly missed areas; and continue rubbing hands until product is dry; this will take a minimum of 15 seconds if sufficient product is used. Hands must be fully dry before touching the P/R/C or the care environment/equipment for the ABHR to be effective. This also eliminates the extremely rare risk of flammability in the presence of an oxygen-enriched environment. DO NOT WIPE OFF.

- There is insufficient evidence for the efficacy of non-alcoholic, waterless antiseptic agents in the health care environment. Therefore, they shall not be used in health care settings.

3.5.2. Using Soap and Water

- Wet hands with warm (not hot or cold) water; hot or cold water does not significantly impact microbe removal but it is hard on the hands, and will lead to dryness
- Apply liquid/gel or foam soap
- Vigorously lather all surfaces of hands for a minimum of 15 seconds to create a good lather; removal of transient or acquired microorganisms
- Microorganisms require a minimum of 15 seconds of mechanical action; Pay particular attention to finger tips, between fingers, backs of hands, wrists and base of the thumbs; these are the most commonly missed areas
- Using a rubbing motion, thoroughly rinse soap from hands with running water; residual soap can lead to dryness and cracking of skin
- Dry hands thoroughly by blotting hands gently with a paper towel; rubbing vigorously with paper towels can damage the skin
- Turn off taps with paper towel to avoid recontamination of the hands. If hand air dryers are used in non-clinical areas, hands-free taps are required
- DO NOT use ABHR immediately after washing hands, as skin irritation will be increased
- HH should not be performed at a P/R/C's sink as this may re-contaminate hands. HH should be done as soon as a dedicated HH sink is available
- If the P/R/C bathroom must be used for hand hygiene (no other option available), avoid contamination of hands with potentially contaminated surfaces and objects.

IF performing hand hygiene with soap and water:

- The sink and the area surrounding the sink must be visibly clean and running water must be available
- The sink should be at point of care
- Use only liquid/gel or foam soap to wash and paper towels to dry to your hands. The sink should be at point of care
- If any of these things are not available ABHR must be used.

3.5.3. When Hands are Visibly Soiled and Liquid/Gel Soap and Running Water is Not Available

- Use a moist pre-packaged wipe to remove the soiling and then follow with ABHR to perform hand hygiene
- Wash hands once a suitable sink and hand hygiene supplies are available.

3.6. Factors that Reduce Effectiveness of Hand Hygiene

3.6.1. Condition of the Hands

The condition of the hands can influence the effectiveness of hand hygiene. Intact skin is the body's first line of defense against microorganisms; therefore, hand care is an essential part of the hand hygiene program. See section 3.6.9 – Lotions and Creams for more information. The presence of dermatitis, cracks, cuts or abrasions can trap microorganisms and compromise hand hygiene. Dermatitis also increases shedding of skin squamous (cells) and, therefore, shedding of microorganisms. If there are any concerns regarding skin integrity, consult Occupation and Environmental Safety and Health (OESH).

3.6.2. Nails

Long nails are difficult to clean, can pierce gloves and harbour more microorganisms than short nails. Keep natural nails clean and short. The nail should not show past the end of the finger. Clean, short fingernails (no more than 0.64 cm or ¼ inch) are required by direct care staff that comes into contact with:

- ☑ Food
- ☑ Equipment used for care
- ☑ Blood or body fluids
- ☑ Sterile linens/supplies
- ☑ Patients/Residents/Clients
- ☑ The care environment

3.6.3. Nail Polish

- Nail polish, if worn, must be fresh and in good condition (i.e., not chipped)13.4
- Nail polish cannot be worn for more than 4 days and must be removed when it becomes chipped
- Nail polish that is chipped or worn longer than four days can harbor microorganisms that are not removed by hand washing, even with surgical hand scrubs13.5
- Freshly applied nail polish does not result in increased numbers of bacteria around the nails
- Gel polish has been shown to damage nails, resulting in nail weakness, brittleness and thinning, putting nails at increased risk for breaking. Nail art (adding decorative paint effects to nails) has been shown to be associated with outbreaks of infection.[13.4]

3.6.4. Artificial Nails or Nail Enhancements

Artificial nails and nail enhancements (gel nails, wraps or extenders - adhesive decorative plastic or vinyl attached to nails) are not to be worn by direct care staff (those who come into contact with food, equipment used for care, blood or body fluids, sterile linens/supplies, P/R/Cs and the care environment. Refer to WRHA Policy 20.10.020, Dress Code, and WRHA Policy 90.00.060 Routine Practices for Reducing the Risk of Infection Transmission.

Artificial nails harbor more microorganisms and are more difficult to clean than natural nails. Artificial nails and nail enhancements have been implicated in the spread of microorganisms and in outbreaks, particularly in neonatal nurseries and other critical care areas. Surgical site infections and hemodialysis-related bacteremias have also been linked to artificial nails. Artificial nails and nail enhancements are also associated with poor hand hygiene practices and result in more tears to gloves.[13.4]

3.6.5. Jewelry

Hand and arm jewelry hinder hand hygiene. Rings increase the number of microorganisms present on hands and increase the risk of tears in gloves. Direct care staff are encouraged to remove hand and arm jewelry prior to work. These items are hard to clean and prevent the removal of microorganisms from surfaces of the hands and wrists that they cover.13.6 A simple and practical solution allowing effective hand hygiene is for HCWs to wear their rings around their neck on a chain as a pendant.13.6

If watches and other wrist jewelry are present, remove or push up above the wrist before performing hand hygiene. They should not interfere with or become wet during hand hygiene. In areas where earrings must be removed or covered with PPE, facial jewelry shall be treated the same way as pierced earrings, i.e., staff must remove or confine all facial jewelry when in areas where pierced earrings must be removed or covered with PPE.

3.6.6. Upper Extremity Support Devices

Direct care staff (those that come into contact with what is listed in 3.6.2 Nails) who wear an upper extremity support device (UESD) must be able to clean the device and perform hand hygiene as per the direction in the Upper Extremity Supportive Devices Infection Prevention and Control Communication Form. See OESH Upper Extremity Support Devices Operational Directives if more information is needed.

3.6.7. Other Obstacles to Effective Hand Hygiene

- Long sleeves should not interfere with, or become wet, when performing hand hygiene
- Ensure long hair is tied up and off the collar to avoid inadvertently touching hair following a hand hygiene moment.

Missed opportunities (seen in hand hygiene audits) are also observed when staff touch their own clothing, personal items, face or equipment (e.g., stethoscope, coffee cup, chart, etc.)

3.6.8. Hand Drying (paper towel, air dryers)

Effective hand drying is important for maintaining hand health. Considerations include:

- Disposable paper hand towels provide the lowest risk of cross-contamination and should be used for drying hands in clinical practice areas (e.g.: P/R/C rooms, clinic rooms etc.)
- If cloth drying towels are used, a new towel must be used for each hand hygiene episode
- Towel dispensers must be mounted so access to them is unobstructed and splashing or dripping onto adjacent wall and floor surfaces is minimized

- Towel dispenser design should be designed so only the towel is touched during its removal for use
    - Towels hanging from the dispenser should not hang directly into a garbage can
- Hot-air dryers, including jet air dryers, must not be used in clinical areas as warm air currents dry hands slowly and can be used by only one person at a time. This results in lines and the temptation to dry hands on clothing. Germs are drawn into the hot-air dryers and redeposited onto freshly washed hands. These germs are also recirculated into the air

3.6.9. Lotions and Creams

- To be effective, skin care products should be used regularly. Health care facilities/programs should develop a proactive program to keep hands healthy so hand hygiene can be optimal
- HCWs must use facility approved lotions compatible with products and gloves in use
- 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
- Hand lotion bottles shall not be reused
- Barrier Creams: unlike hand lotions, which penetrate the skin via pores, barrier creams are adsorbed to the skin and are designed to form a protective layer that is not removed by standard hand washing. Barrier creams may actually be harmful as they trap agents beneath them, ultimately increasing risk for either irritant or allergic contact dermatitis
- Inappropriate barrier cream application on HCW hands may exacerbate irritation rather than provide benefit.

3.6.10. Dispensers

- Products must be dispensed in a disposable pump/squirt container that is not topped-up, to prevent contamination
- **DO NOT** add soap or hand rub to a partially empty dispenser
- If reusable dispensers/containers are utilized the container as well as the pump system must be emptied, washed and air-dried completely prior to refilling
- Locked, tamper-proof containers should be used to secure the product in place

- National Fire Code, and local fire regulations, for ABHR placement and storage shall be adhered to. Consideration of alternate ABHR options may be required to support necessary point-of-care use, as well as adhere to fire regulations
- An environmental risk assessment should be performed to determine the most appropriate placement of ABHR dispensers.[13.1]

Careful selection of products used for hand hygiene practice (e.g., ABHR, soaps, lotions, paper towels) has a significant impact on hand hygiene compliance