

Hand Hygiene Considerations in Facility Design

Hand hygiene facilities must be readily available in all clinical areas. Studies offer convincing and important evidence that providing a conveniently located hand hygiene sink in each client room reduces HAI rates. Improper sink placement and design can add to the environmental reservoir of contaminants and can lead to outbreaks, particularly with gram-negative bacilli (e.g., *Pseudomonas* spp.). Hand washing sink indications and placement criteria must therefore be considered in renovations and new construction projects within the region.

Aging infrastructure and lack of health care facility design standards in the past, accounts for difficulties in meeting current published hand hygiene requirements. Every opportunity, i.e., renovations and new construction projects, must be taken to improve adherence with published Canadian Standards Association (CSA) health care facility standards.

Hand Washing Sinks Placement

There must be sufficient sinks to encourage and assist staff to readily conform to hand hygiene protocols. Nearby surfaces shall be non-porous to resist fungal growth, and must be protected from splashes with impermeable back/side splashguards. Eyewash stations shall not be attached to hand hygiene sinks.

Hand Washing Sinks

- Must be dedicated to hand washing and not used for any other purpose. Sinks used for cleaning of equipment and the disposal of waste fluids (e.g., IV fluids, lipids, used antiseptics) must not be used for hand hygiene;
- Must be made of non-porous material;
- Must be free-standing and shall be wall-mounted and at least one metre away from any fixed work surface or separated by a splash barrier. There shall be no storage underneath (due to proximity to sanitary sewer connections and risk of leaks or water damage). Sinks shall not be inserted into, or immediately adjacent to a counter;
- Shall be located in such a way and at sufficient distance to prevent contamination of client clean supplies or adjacent counters through splashing;
- Shall be regularly inspected to ensure they are maintained in good condition;
- Are convenient and accessible;
- Shall be installed:
 - Inside each client room, adjacent to the entrance, and in addition to sink in client washroom;
 - Inside any room where treatment/care is provided or procedure or physical examinations are performed;
 - Inside any room with a toilet;
 - Inside or within 6 metres of each nursing station;

- Inside each soiled utility/soiled holding room (in addition to sinks or hoppers that are used for contaminated material);
- Inside each area where un-bagged, soiled linen is handled;
- Inside or within 6 metres of each staff lounge;
- Inside each room in which medication is prepared (including in pharmacies);
- Inside any room in which food (e.g., infant formula, breast milk, nourishment) or health care items (e.g., tray) are prepared. This includes, but is not limited to, clean utility rooms used for equipment preparation, nourishment centres and rooms where infant formula is prepared;
- Inside all rooms where infants are located;
- Inside each clinical laboratory and morgue;
- Inside or adjacent to each diagnostic MRI room;
- Within 6 metres of each laboratory workstation and within each work room;
- In areas where hands are likely to be contaminated, such as in goods receiving areas, chemical storage, waste storage and disposal areas;
- In airborne precautions rooms, there shall be one hand washing sink in the ante-room, one in the room itself, and one in the client bathroom;
- In multi-client rooms where three or more clients share a room, then at least one sink is required for every three clients, with a sink being no more than 6 meters (20 feet) from each individual bedspace.

Hand Washing Sinks Design Criteria

The design of hand washing sinks (e.g., depth, position of drain) shall prevent splash back that may contaminate hands or faucets.

- Backsplashes shall extend a minimum 60 cm/24 inches above sink level and a minimum of 25 cm/10 inches below sink level;
- Backsplashes shall be seam-free. All edges shall be sealed with a waterproof barrier. Backsplashes shall include the area under the paper towel dispenser and soap dispenser;
- Controls (faucets) shall be hands-free. Electric eye operation or foot, elbow or knee operated handles/blades are acceptable;
- Faucets shall not swivel and shall not be fitted with aerators or similar devices. Note: Only laminar flow aerators are allowed;
- Water temperature must be able to be adjusted. Electric eye technology shall have a means for manual adjustment of water temperature;
- If electric eye-triggered devices are used, there shall be a contingency plan to deal with power failure (e.g., tie in to emergency power system). Battery operated only faucets are prohibited.

Scrub Sinks

- A scrub sink (as distinct from a hand hygiene sink) shall be provided in any area where operative procedures are performed including operating rooms, delivery rooms, endoscopy suites, interventional radiology, and cardiac catheterization suites.

Hand Drying

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

- Disposable paper hand towels provide the lowest risk of cross-contamination and shall be used for drying hands in clinical practice areas;
- Cloth drying towels shall not be used;
- Towel dispensers shall be mounted such that access to them is unobstructed and splashing or dripping onto adjacent wall and floor surfaces is minimized;
- Towel dispenser design shall be such that only the towel is touched during removal of towel for use;
- A foot pedal-operated waste bin with a waste bag, shall be provided by each sink;
- Single-use towels shall be available to turn off faucets to avoid recontamination of the hands;
- A paper towel waste container shall be located near the exit door for disposal of the paper towel used on the door hardware;
- Hot-air dryers shall not be used;
- Where hot-air dryers are used in non-clinical area, hands-free taps are required and there shall be a contingency plan for power interruptions.

Alcohol-based Hand Rub (ABHR) Dispenser Placement

Installing ABHR dispenser at the point-of-care improves adherence to hand hygiene. Hand hygiene products available at point-of-care are easily accessible to staff by being as close as possible (e.g., within arm's reach), to where client contact is taking place.

ABHR dispensers shall be provided in each of the following locations:

- At all entrances and exits to the health care facility;
- On the external wall immediately adjacent to the entrance to every client bedroom;
- On a wall immediately adjacent to the entrance to every client care area (e.g., exam rooms and procedure rooms in out-client settings, emergency departments, medical imaging procedure rooms, etc.);
- In locations where personal protective equipment is donned or doffed;
- In locations where they are needed to facilitate compliance with routine practices;
- Adjacent to the bedside (point-of-care) in all situations except where client safety could be put at risk (e.g., mental health unit).



ABHR dispensers shall:

- Be mounted at a height of approximately 1 metre from the floor. Adjacent floor and wall surfaces shall be protected from the hand hygiene fluid;
- Be placed so that they minimize splashing or dripping onto adjacent wall and floor surfaces;
- Not be placed at, or adjacent to hand washing sinks;
- Not be installed over or directly adjacent to an ignition source, such as an electrical outlet or switch, or over carpeted areas.