

## 2 Hand Hygiene

### 2.1 General

Hand hygiene consists of washing hands with soap and water or use of alcohol based hand rubs. There are three distinct hand hygiene activities:

- General or routine
- Procedural (prior to gowning, gloving or an aseptic procedure)
- Surgical for operating procedures.

As adequate hand hygiene is a major factor in preventing transmission of infections, it is essential that provision of sufficient and appropriate hand hygiene facilities are considered in the early design stage.

The World Health Organisation hand hygiene recommendations for health care workers include:

- Use of alcohol based hand rubs (ABHR) as the preferred means of routine hand cleaning if hands are not visibly soiled
- Washing hands with soap and water if hands are visibly soiled, if staff have been in contact with spore forming pathogens or when gloves have not been used.

In patient areas, staff will perform hand hygiene at the following five key events:

1. Before touching a patient
2. Before a clean/ aseptic procedure on a patient
3. After exposure to body fluids
4. After touching a patient
5. After touching patient surroundings.

(Source: WHO, Hand Hygiene: Why, How and When brochure, 2009)

A combination of alcohol based hand rub dispensers and handwash basins will be required in all patient areas with the health facility.

### 2.2 Alcohol Based Hand Rubs

Current research indicates that Alcohol Based Hand Rubs (ABHR) are the primary and preferred method of hand cleansing. The key advantages are:

- ABHRs reduce more bacteria on hands than soap and water
- Take less time to use, (15 to 20 seconds)
- More convenient; easy to install and cost effective (also paper towels are not required).

ABHR should be located so they are readily available for use as follows:

- At the point of care
- At the foot of each patient bed or trolley
- In clinical areas.

### 2.3 Handwash Basins

Handwash basins should be provided in rooms where procedures are likely to occur, including inpatient rooms, ICU bed bays, treatment and procedure rooms. The type of handwash basins in clinical areas such as these should be ideally provided with sensor taps, prevent splashing, and be of sufficient size and height above floor level to permit the washing of forearms.

In areas with physical barriers, e.g.: Emergency Unit cubicles or rooms, a handwash basin should be accessible within each individual space.

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It is also essential that handwash stations are provided where food, drugs, pathology specimens and contaminated materials are handled or processed.

The Guidelines refer to several categories of hand basins including Type A, B, C and troughs, and the various configurations and placement for different types and placement of tapware. These are addressed in the following sections, diagrams and tables.

Handwash basins need to be selected so as to reduce the risk of splashing in areas where direct patient care is provided. In addition, the combination of handwash basin and tapware needs to be coordinated so that water discharge from the tap outlet is not directly onto the waste outlet / sealed trap of the basin. Handwash basins should be installed to ensure a snug fit with wall or countertop, with junctions sealed to prevent water leaks.

Water being present around handwash basins or sinks encourages the development of mould and bacteria in any substrate material. Where countertops occur, these need to be properly sealed and maintained. Integral splashbacks can also help to eliminate the need for junctions that require caulking.

Under-mount handwash basins are difficult to seal or clean and therefore should be avoided.



**Figure 2: Under mount hand basin not recommended**

Handwash basins should be provided with the following:

- Impervious splashback a minimum of 310mm above the handwash basin rim
- Tapware suitable for the type of basin; the water discharge point should be a minimum 260mm above the bottom of the hand wash basin for clinical hand washing
- The bowl should have a nominal size of not less than 0.1m<sup>2</sup> and have a minimum bowl dimension of 230mm
- Soap dispensers should be a non-refillable type and positioned so that any spills from the dispenser during operation can be captured onto the basin for infection control and ease of maintenance; spills onto floors should be avoided
- Paper towel dispenser and waster receptacle.

Mirrors should not be installed at hand scrub stations or at hand washing stations in food preparation areas, nurseries, clean and sterile supply areas, or other areas where infection control can be compromised by hair grooming.

## 2.4 Handwash Basin Types

### Type A

Type "A" handwash basin refers to a large "Clinical Scrub" type. The tapware is to be wall mounted with hands-free operation (elbow, foot or electronic). This handwash basin is used in areas requiring clinical hand-washing for sterile procedures - for example, ICU Rooms, Treatment Rooms and Cardiac Catheterisation areas.

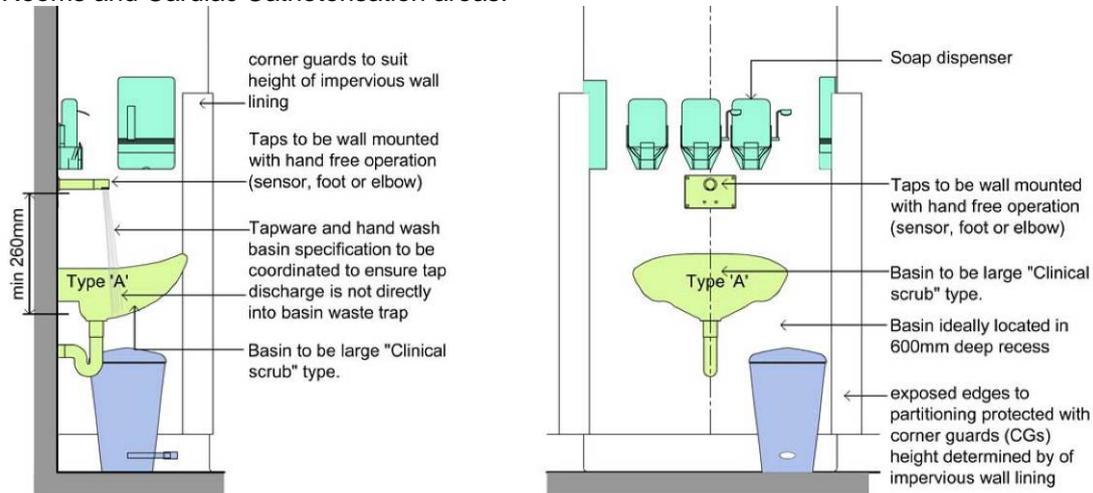


Figure 3: Type A Handwash basin

### Type B

Type "B" basin refers to a general staff handwash basin of a medium - sized wall mounted type. Tapware can either be wall mounted or basin mounted with hands-free operation (elbow or wrist). This basin is used in areas requiring general staff hand washing, for example Inpatient Unit (IPU) corridors.

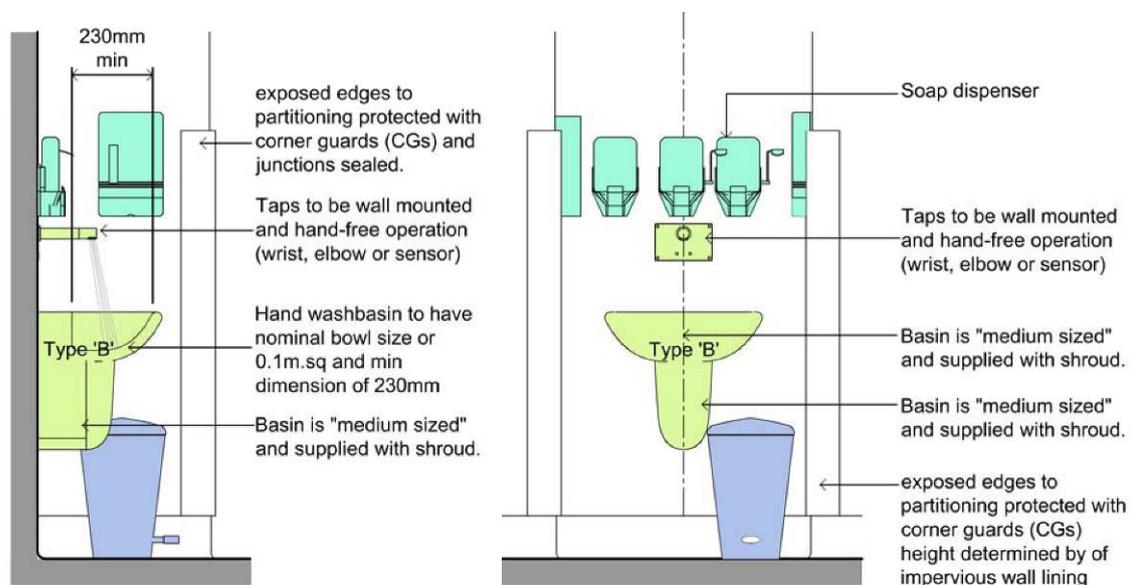


Figure 4: Type B Handwash basin

### Type C

Type C basin refers to a small staff hand washbasin that is wall mounted. The tapware is either wall mounted or basin mounted with hands-free operation (elbow or wrist). This basin is used in areas requiring general staff hand washing, for example Staff Amenities and Toilet Areas. The handwash basin minimum size is a nominal 0.1m<sup>2</sup>, with a minimum basin dimension of 230mm.

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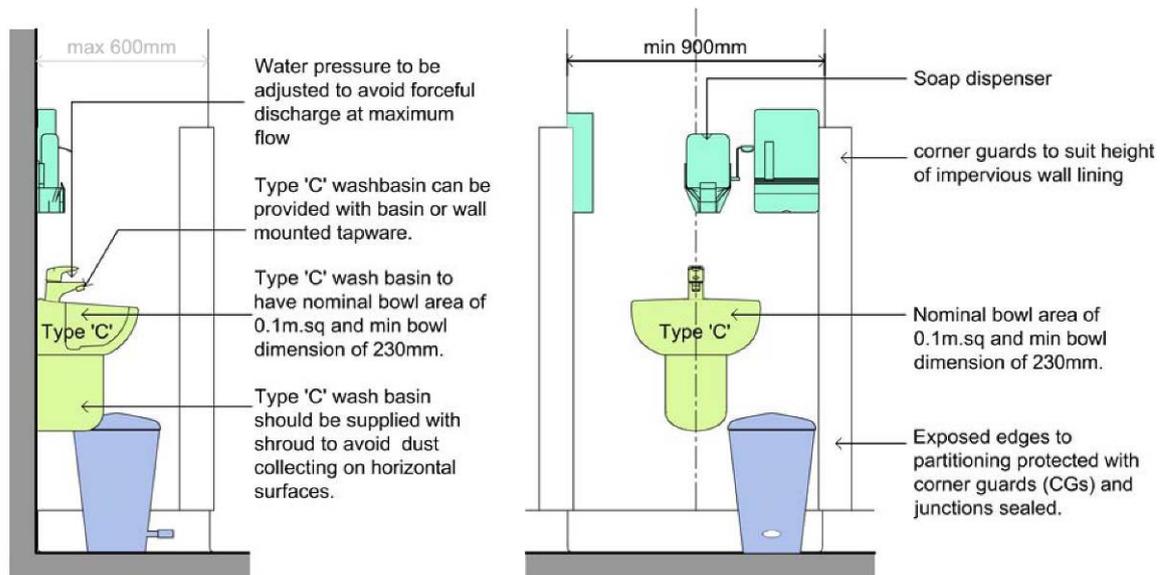


Figure 5: Type C Handwash basin

### Scrub Sinks

Scrub sink refers to a long sink that can accommodate one or more staff scrubbing for a sterile procedure at the one time. Refer to Ergonomics for the heights, width of space per person and type of tapware.

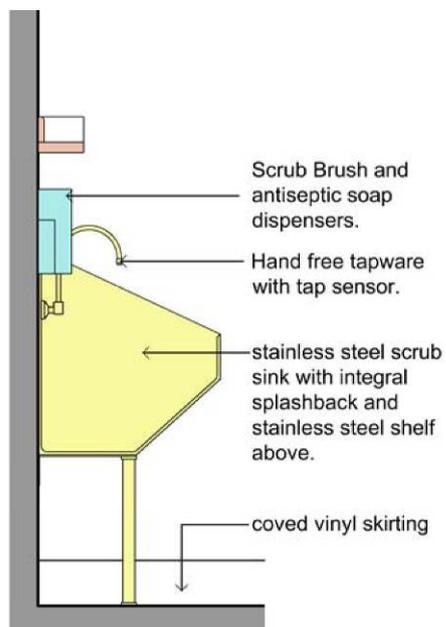


Figure 6: Typical scrub sink

To avoid splashing and cross contamination, a decontamination sink should be separated from any clean work area by either a 1250mm distance from the edge of the sink - or by a separating wall or screen. If screening is used, it should extend a minimum of 1250mm above the sink rim.

## 2.5 Handwash Basins – Ratios and Placement

Hand washing basins should be provided in the following ratios:

Location	Quantity
Ambulatory Care Units (Chemotherapy, Renal Dialysis)	1 per enclosed bay; 1 per 4 open treatment bays;
Emergency Unit	1 per enclosed treatment bay; 1 per resuscitation bay; 1 per 4 open treatment bays
Inpatient Units	1 per single patient room; 1 per room in multi-bed rooms
Intensive/ Critical Care Units: (ICU, HDU, CCU)	1 per bed, enclosed or open bays
Neonatal Intensive Care Nurseries (NICU)	1 per enclosed cot space; 1 per 2 open cot spaces
Neonatal Special Care Nursery (SCN)	1 per enclosed cot space; 1 per 3 cot spaces
Patient treatment areas generally	not greater than 10 metres to a hand washing basin

**Table 2: Handwash Basin Ratios**

Handwash basins are to be located within 6 metres of any food preparation area.

Staff rooms are generally equipped with sinks for food preparation and dishwashing. Hand washing in food preparation sinks should be strongly discouraged. Placement of a handwash basin within, or in close proximity of a staff room should be considered to ensure any risk of infection is minimized.

## 2.6 Schedule of Handwash Basin Types

The following indicates recommended handwash basin and tap combinations for particular rooms. For rooms not listed, refer to a similar functional use.

Room / Space	Basin Type	Wall Tap	Basin Tap	Wrist Action	Elbow Action	Infra-red	Remarks
Bay - Handwashing	B	Yes	Optional		Yes		In Corridors
Bathroom	B		Yes	Yes			
Birthing Room	A	Yes			Yes	Optional	
Clean Utility	B	Yes	Optional		Yes		
Clean-Up Rooms	B		Yes	Yes			
Consult Room	B	Yes	Optional	Yes	Yes		Also includes Exam Rooms
Dirty Utility	B		Yes	Yes			
Ensuites	B		Yes	Yes			
High Dependency Unit	A	Yes			Yes	Optional	
Imaging Rooms - Interventional	A	Yes			Yes	Optional	Or scrub trough
Inpatient Bedrooms	A	Yes			Yes		
Intensive Care Unit	A	Yes			Yes	Optional	
Isolation Room - Airlock / Anteroom	B	Yes			Yes		
Isolation Room/ S	B	Yes			Yes	Optional	
Mortuary	B	Yes	Optional		Yes		
Pantry	B		Yes	Yes			Includes Kitchenettes
Pharmacy	A	Yes			Yes	Optional	
Recovery	A	Yes			Yes	Optional	
Scrub-Up / Gowning	Scrub trough	Yes				Yes	Operating Unit, Day Procedure Unit, Imaging- interventional
Staff Room	C	Yes	Optional	Yes	Yes		Optional

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Room / Space	Basin Type	Wall Tap	Basin Tap	Wrist Action	Elbow Action	Infra-red	Remarks
Toilet - Patient	B		Yes	Yes			
Toilet - Public	C		Yes	Yes			
Toilet - Staff	C		Yes	Yes			
Treatment/ Procedure Rooms	A	Yes			Yes	Optional	Or scrub trough

**Table 3: Schedule of Handwash Bain Types**

### 2.7 Hand Dryers

Drying is an essential part of the hand hygiene process.

There are three main groups of hand dryers, namely modern jet-air hand dryers, warm air hand dryers and paper towels.

Many studies have been conducted to compare the bacteria levels present after the use of these three different types of hand dryers.

Results have confirmed that only paper towels reduced the total bacteria on the hands.

Tests have also been conducted to establish the impact of potential cross-contamination within the ablution facility environment. Results determined that the jet dryer was capable of blowing micro-organisms some distance from the dryer, potentially contaminating other users of the ablution facility. The warm air hand dryer also spread micro-organisms, albeit to a lesser extent. Paper towels however showed no significant spread of micro-organisms.

Studies have observed that the bacterial count doubled with hot air dryer types, while there was approximately a quarter reduction in the bacterial count with paper towels.

(Refer to TUV Produkt and Umwelt GmbH, Report No 425-45206)

Accordingly, all clinical areas in healthcare facilities should be supplied with paper towel dispensers. Use of warm air or jet-air hand dryers in non-clinical public areas may be appropriate and more cost effective in operation, but with increased infection risk, should be used with caution.



**Figure 7: Typical Hand Drying Methods**



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