2. Hand Hygiene

2.1 General

Hand hygiene consists of washing hands with soap and water or use of antiseptic hand sanitisers.

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 is considered in the early design stage.

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

- Use of antiseptic hand sanitisers (AHS) 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

Figure 2: Example of Poster with instruction for Hand Rub

Figure 3: Example of Poster with instruction for Hand Wash

(Source: World Health Organization) **(Source: World Health Organization)**

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 antiseptic hand sanitiser dispensers and handwash basins will be required in all patient areas within the health facility.

2.2 Antiseptic Hand Sanitisers

Current research indicates that Antiseptic Hand Sanitiser (AHS) are the primary and preferred method of hand cleansing. The key advantages are:

- AHS's 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)

AHS 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

Refer to **Standard Components** in these Guidelines for their required locations.

Antiseptic Hand Sanitisers should be in single-use, non-refillable pouches inserted into dispensers. Alcohol-based Hand Sanitisers should not be used in IVF Units as they are embryo-toxic.

Where alcohol-based AHS are used, they should be stored in accordance to flammable liquid storage requirements.

Antiseptic Hand Sanitisers are not a complete replacement for Handwash Basins. After every 5 to 7 instances of using Antiseptic Hand Sanitiser, full hand wash with water and soap is recommended in order to remove any built-up of AHS.

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 to each individual space within a short distance.

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. 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. Integral splashbacks, however, are not mandatory.

Under-mount handwash basins are difficult to seal or clean and therefore should not be used.

Figure 4: Under mount hand basin not recommended

Handwash basins should be provided with the following:

- Impervious splashback a minimum of 300mm 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^2 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
- Wall mounted paper towel dispenser and waste receptacle

Mirrors should not be installed at hand scrub stations or at hand washing stations in food preparation areas, patient areas, consultation rooms or other clinical areas where infection control can be compromised by hair grooming.

For Handwash basins provided in clinical, patient or catering areas (excluding any bathrooms, ensuites, toilets etc.), mirrors cannot be provided over handwash basins.

2.4 Handwash Basin Types

2.4.1 Type A

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

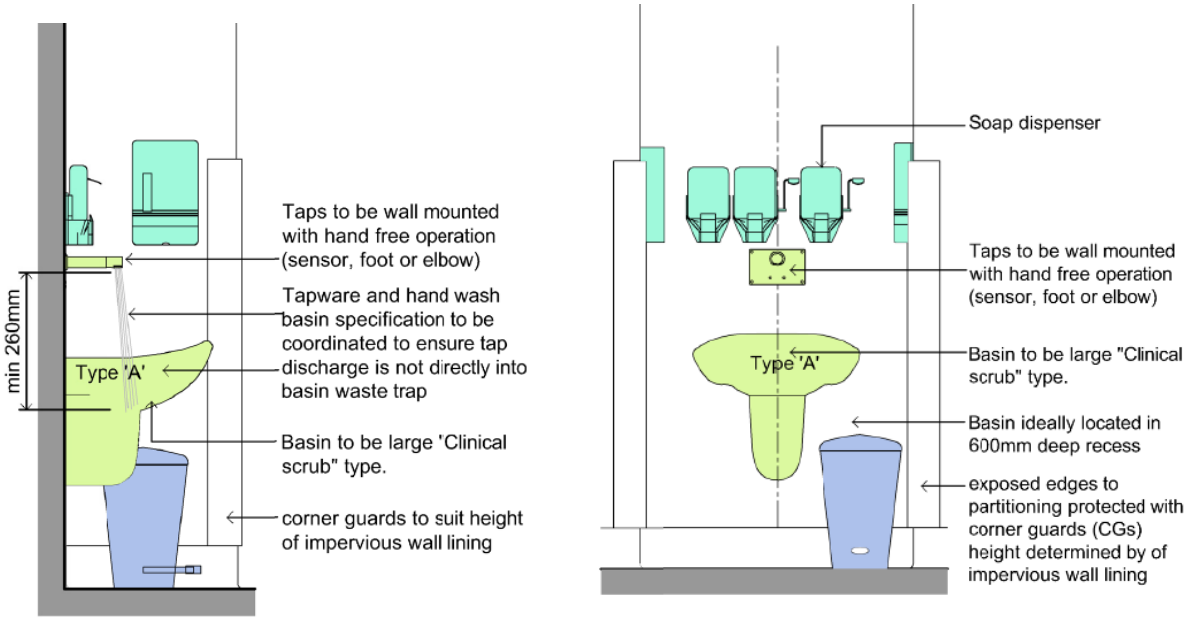

Figure 5: Type A Handwash basin

2.4.2 Type B

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

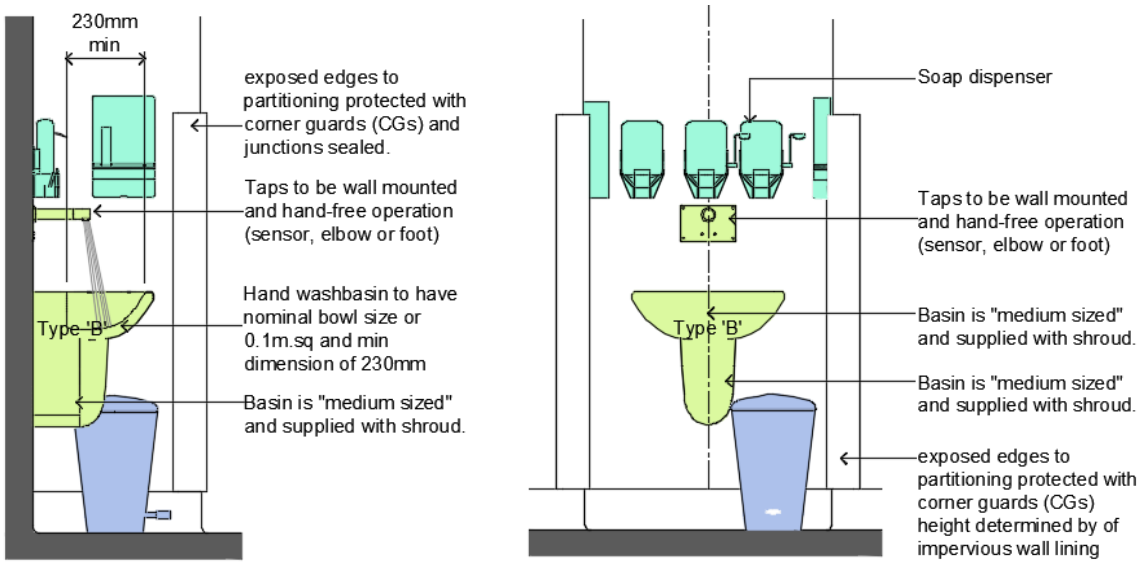

Figure 6: Type B Handwash basin

2.4.3 Type C

Type C basin refers to a small staff hand washbasin that is wall mounted or integral vanity type (moulded basin with the benchtop). The tapware is either wall mounted or basin mounted with hands-free operation (sensor, elbow or foot). 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^2, with a minimum basin dimension of 230mm.

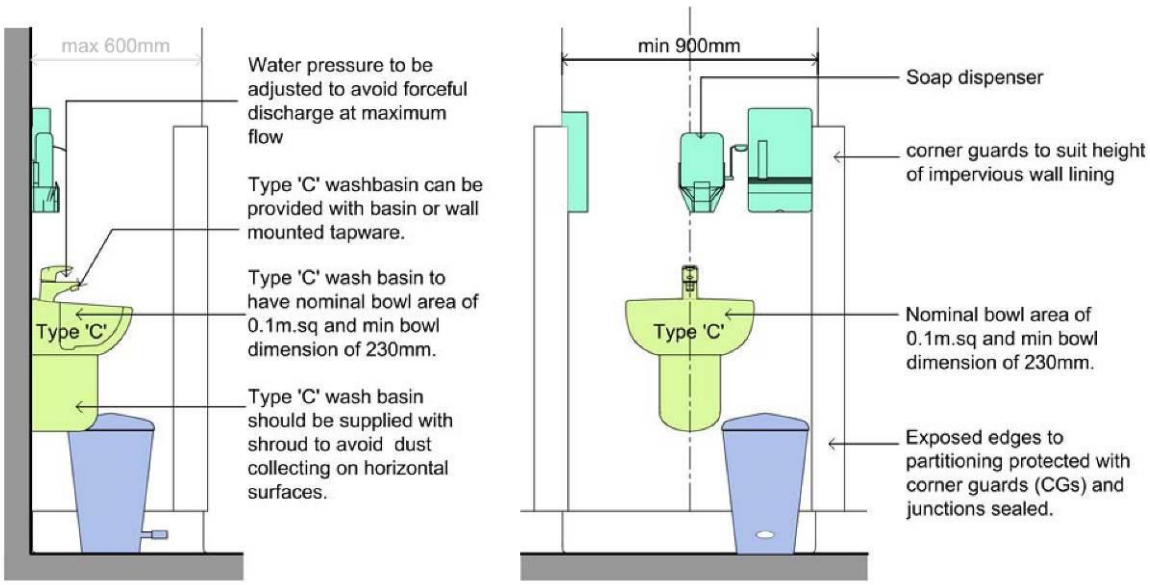

Figure 7: Type C Handwash basin

2.4.4 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.

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 floor.

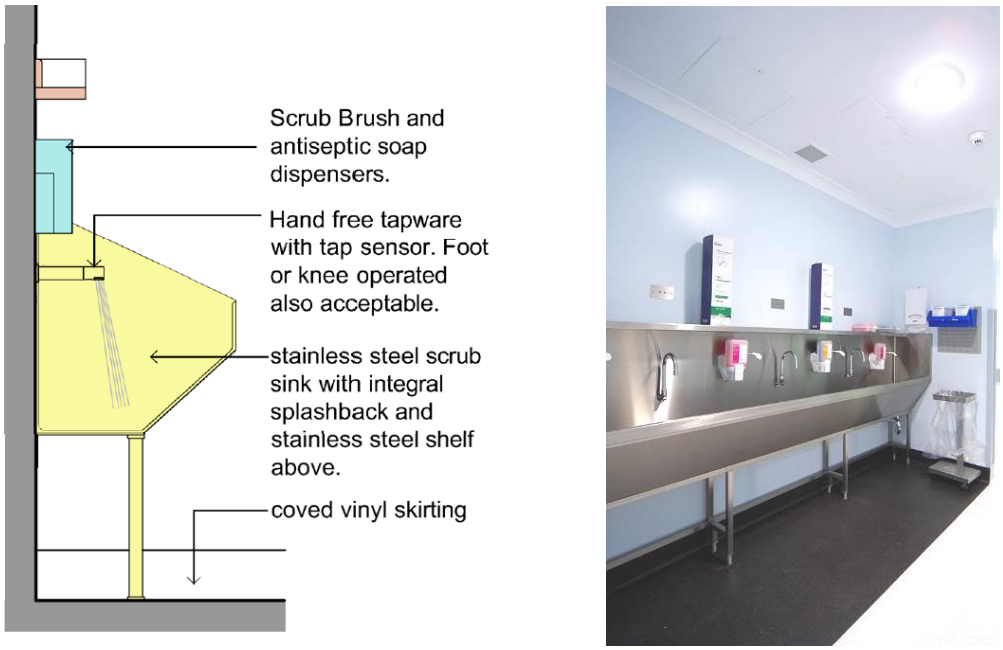

Figure 8: Typical scrub sink

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 or shared patient room; additional basins are required outside the patient rooms (in corridors) as per the FPU requirements
Intensive/ Critical Care Units; (ICU, HDU, CCU)	1 per bed in enclosed room or 1 per 2 beds in open bays; additional basins are required outside the patient rooms (in corridors) as per the FPU requirements
Neonatal Intensive Care Nurseries (NICU)	1 per enclosed cot space; 1 per 2 open cot spaces; additional basins are required outside the patient rooms (in corridors) as per the FPU requirements
Neonatal Special Care Baby Unit (SCBU)	1 per cot in enclosed room; 1 per 3 open cot spaces; additional basins are required outside the patient rooms (in corridors) as per the FPU requirements
Patient treatment areas generally	no 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 minimised.

For the requirement for hand wash basins, also refer to the FPU's and Standard Components in these Guidelines.

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	Sensor Tap	Remarks
Bay - Handwashing	B	Optional	Yes		Yes	Recommended	In Corridors
Bathroom	B		Yes	Yes		Optional	
Birthing Room	A	Yes			Yes	Recommended	
Clean Utility	B	Optional	Yes		Yes	Recommended	
Clean Utility/ Medication Room	B	Optional	Yes		Yes	Recommended	
Clean-Up Rooms	B		Yes		Yes	Recommended	

Room / Space	Basin Type	Wall Tap	Basin Tap	Wrist Action	Elbow Action	Sensor Tap	Remarks
Consult Room	B	Optional	Yes	Yes	Yes	Recommended	Also includes Exam Rooms
Dirty Utility	B		Yes		Yes	Recommended	
Endoscopy Procedure Room	A	Yes			Yes	Recommended	Or scrub trough outside room
Ensuites	B		Yes	Yes		Optional	
High Dependency Unit	A	Yes			Yes	Recommended	
Imaging Rooms – Interventional (eg. Cath Labs)	A	Yes			Yes	Recommended	Or scrub trough outside room
Inpatient Bedrooms	B	Optional	Yes		Yes	Recommended	
Intensive Care Unit (Adult and Neonatal)	A	Yes			Yes	Recommended	
Isolation Room - Airlock / Anteroom	B	Optional	Yes		Yes	Recommended	
Isolation Room/	B	Optional	Yes		Yes	Recommended	
Laboratory	B	Optional	Yes		Yes	Recommended	
Medication Room	B	Optional	Yes		Yes	Recommended	
Mortuary	B	Optional	Yes		Yes	Recommended	
Pantry	B		Yes	Yes		Recommended	Includes Kitchenettes
Pharmacy - General	B	Optional	Yes		Yes	Recommended	
Pharmacy - Preparation Area	A	Yes			Yes	Recommended	
Procedure Rooms	A	Yes			Yes	Recommended	Or scrub trough outside room
Recovery	A	Yes			Yes	Recommended	
Scrub-Up / Gowning	Scrub trough	Yes				Yes	Operating Unit, Day Procedure Unit, Imaging-interventional

Room / Space	Basin Type	Wall Tap	Basin Tap	Wrist Action	Elbow Action	Sensor Tap	Remarks
SSU - De-contamination	B	Optional	Yes		Yes	Recommended	
Staff Room	C	Optional	Yes	Yes		Optional	
Toilet - Patient	B		Yes	Yes		Optional	
Toilet - Public	C		Yes	Yes		Optional	
Toilet - Staff	C		Yes	Yes		Optional	
Treatment	A	Yes			Yes	Recommended	

Table 3: Schedule of Handwash Bain Types

For the requirements in all other room types, refer to the individual Standard Components.

2.7 Hand Dryers

Drying is an essential part of the hand hygiene process.

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

Many studies have been conducted to compare the bacteria levels present after the use of these four 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.

The roll cloth towels are seen as a risk to hygiene due to unreliable operation and control process.

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

Accordingly, all areas in healthcare facilities should be supplied with paper towel dispensers. Use of warm air or jet-air hand dryers in healthcare facilities are not permitted.

Jet Air Dryer

Warm Air Dryer

Roll Cloth Towels

Paper Towel - sheets

Paper Towel - motion sensor

Paper Towel – paper roll

Figure 9: Typical Hand Drying Methods