



DOH Health Facility Guidelines 2019

Part B – Health Facility Briefing & Design

230 Linen Handling Unit



Executive Summary

The Linen Handling Unit is responsible for the collection of dirty linen, processing of dirty linen including sorting, washing, drying and folding and storage of clean linen. Linen may be processed on-site or off-site. If on-site, the Linen Handling Unit can be within the main building or in a remote building on-site. But most commonly, linen processing is outsourced in a commercial arrangement with an external provider and delivered to the facility. The Linen Handling Unit is commonly located in the service area if within the facility with close access to clean and dirty loading dock areas.

The minimum functional areas of a Linen Handling Unit should include Clean Linen Holding room with preloaded trolleys from an external supplier along with a Dirty Linen Holding room stored with dirty linen ready for collection. Each of these should have access to a clean or dirty loading dock respectively.

Optional functional areas could include uniform holding, a small commercial laundry or a full-scale commercial laundry depending on the operational policy of the facility. This FPU does not address the specific arrangement and requirements of an on-site full-scale Laundry processing unit. Holding areas should be sufficient for daily collection. Design of Linen Handling areas should ensure that clean and dirty work flows do not cross as far as possible and that holding rooms are free from insects and vermin.

The Schedules of Accommodation are provided using references to Standard Components (typical room templates) and quantities for typical units at Role Delineation Levels (RDL) 2 to 6. Users should follow the principles established in these guidelines if they wish to create units of different sizes and configurations.

Further reading material is suggested at the end of this FPU but none are mandatory. Users who wish to propose minor deviations from these guidelines should use the deviation form (Appendix 8 in Part A) to briefly describe and record their reasoning based on models of care and unique circumstances. The details of this FPU follow overleaf.

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1. Linen Handling Unit

1.1 Introduction

Linen handling involves:

- The collection of dirty linen on a regular basis
- Processing of dirty linen including sorting, washing, drying and folding
- Storage of clean linen and supply to inpatient and ambulatory care units on a regular basis.

Linen processing may be done within the hospital facility or off-site in a commercial or shared laundry, depending on the Operational Policy. As a minimum, each facility shall have provisions for storage and exchange of clean and soiled linen for appropriate patient care.

1.2 Functional & Planning Considerations

1.2.1 Operational Models

Linen processing may be performed on-site in a separate building or within the hospital. Increasingly, linen processing is outsourced in a commercial arrangement with an external provider and delivered to the facility.

The minimum service provided by the hospital will generally be a daily collection of dirty linen and daily delivery of clean linen to patient units.

Hours of Operation

The Linen Handling Unit typically operates up to 12 hours per day, 7 days per week.

1.3 Unit Planning Models

Location

The Linen Handling Unit is located in the service area of the facility with close access to clean and dirty loading dock areas. An on-site laundry facility may be located in the hospital or remotely in a separate building with good connectivity to the hospital.

1.3.1 Functional Zones

As a minimum, the following elements shall be provided:

- Service Areas:
 - Clean Linen Holding room with an area for receipt of pre-loaded linen trolleys from an external supplier
 - Dirty Linen Holding with an area for holding of dirty linen collection trolleys
- Support Areas
 - Service entrance protected from weather for loading and unloading clean and dirty linen
 - Loading Dock, with clean and dirty zones, that may be shared with other service units
 - Trolley Washing area that may be shared with other service units. This may be a part of another Unit within the facility- such as Housekeeping.
 - Equipment Parking Bay for holding of clean linen supply and collection trolleys
- Staff Areas including:

- Manager or Supervisor's Office
- Access to a meeting room for Training and staff meetings
- Sign-on bay for staff, optional depending on the Unit Operational Policy and the method used for staff attendance
- Access to Staff Room, Toilets, Shower and Lockers; these may be shared with general hospital staff

Optional functional areas include:

- A clean linen inspection room or area, located on or off the site, as part of the main linen service, as determined by the system identified in the hospital's Operational Policy
- Sewing/ Mending room, for linen repairs and alterations
- Uniform holding and issuing room with changing facilities
- Small commercial laundry room with washing and drying facility for processing small items that are not handled by an external laundry
- Full scale Laundry on-site for bulk processing, if provided includes:
 - Laundry processing rooms with commercial type equipment that can process at least a seven-day supply within the regular scheduled work week
 - Storage for laundry supplies and chemicals
 - Employee hand-washing facilities in each separate room where clean or soiled linen is processed and handled
 - Arrangement of equipment that permits an orderly work flow and separation of dirty and clean processes with no cross traffic
 - Convenient access to Staff Amenities, which may be shared
 - Compliance with all of the relevant statutory requirements and regulations for cleaning and handling linen will be required

This FPU does not address the specific arrangement and requirements of an on-site full-scale Laundry processing unit. Seek the advice of a Specialist Laundry Consultant, if a full scale in-house laundry is intended, for clarity - an in-house laundry is not mandatory.

Clean Linen Holding

The Clean Linen Holding room receives the clean linen supply on trolleys from an external supplier. The Clean Linen Holding room should have capacity for enough supply of linen considering "one missed delivery", and should be sufficient for efficient operation of the hospital in emergencies. Clean linen is supplied to inpatient units on trolleys held in the clean linen holding room until delivery; or a facility may choose to directly distribute clean line upon receipt.

The Clean Linen Holding Room should be located with ready access to the clean loading dock area for deliveries. The room may include a workstation for linen receipt and counting and shelving for stored items of linen such as curtains, blankets, bedspreads, as well as additional supplies of general linen articles.

Refer to **Standard Components - Linen Holding-Clean** for additional information and specific room requirements.

Dirty Linen Holding

The Dirty Linen Holding room will hold bagged dirty linen on trolleys awaiting collection and removal to the laundry facilities. The room should be sized sufficient for holding several days of dirty linen awaiting collection, allowing for delays in the collection service in emergencies.

Dirty Linen Holding should be located with ready access to the dirty loading dock area for waste removal.

Refer to **Standard Components - Linen Holding-Soiled** for additional information and specific room requirements.

Support Areas

Service Entry

The service entry is an external area with access to the clean and dirty loading dock areas for delivery of clean supplies and removal of waste. Traffic and work flows for clean and dirty functions should not cross. The service entry may require secured access for vehicles. The loading dock area should be covered.

Refer to **Standard Components - Loading Dock** for additional information and specific requirements.

Trolley Washing

Trolley washing may be provided in the service area and shared by other service units. Where the linen supply is provided by an external enterprise, trolley washing may be undertaken off-site with trolleys delivered clean. Trolley washing may be shared with the Housekeeping Unit.

Optional Areas:

Linen Inspection and Mending

The Linen Inspection and Mending is an area where linen such as sheets, wraps and uniforms are examined for tears, holes and signs of wear. Linen suitable for repair may be mended in the sewing area, containing sewing machines and patching materials. This may be a room separated to the clean linen if preferable.

An external linen provider may undertake this task off-site.

Uniform Holding

Uniform holding will require a locked room containing uniform supplies for various hospital staff, sized to accommodate a multitude of uniform components in a range of sizes. Internally the room should include changing cubicles, for staff to check uniform sizing. The room may be located adjacent to the clean linen handling area or may be located remotely where there is convenient access for staff.

Hospital Laundry for Small Items

The hospital may include a small-scale laundry fitted with commercial washing and drying equipment for on-site washing of items not processed by an external laundry service. This may include mop heads, patient lifter slings and delicate linen items used for catered functions.

The laundry will be located in the service area with convenient access for linen handling personnel.

Refer to **Standard Components - Laundry-Hospital** for additional information and specific room requirements.

1.4 Functional Relationships

1.4.1 External Relationships

The Linen Handling Unit will require ready access to:

- The service entry and clean Loading Dock for daily deliveries of clean linen on trolleys to the Clean Linen Holding
- Waste Management area and Dirty Loading dock for daily collection of dirty linen on trolleys from the Dirty Linen Holding room
- All hospital Units supplied with linen; good connectivity is required to service corridors and

service lifts for linen deliveries and collection services

The optimum external functional relationships are demonstrated in the diagram below.

1.4.2 Internal Relationships

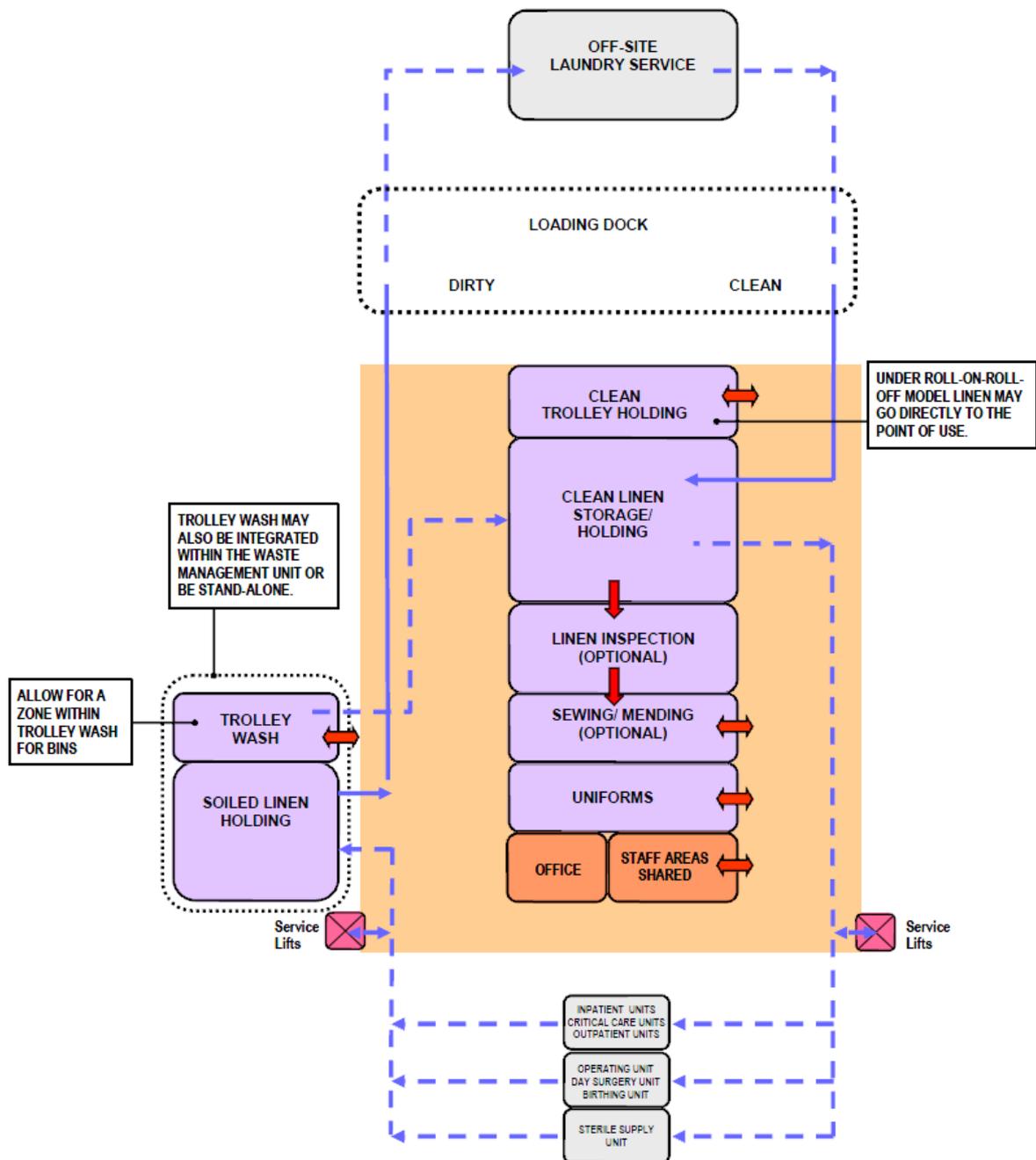
Within the Linen Handling Unit, clean and dirty linen holding areas will generally be separated to prevent cross flow of clean and dirty traffic to the Loading Dock area.

Trolley storage and cleaning areas should be located with convenience for efficient linen handling.

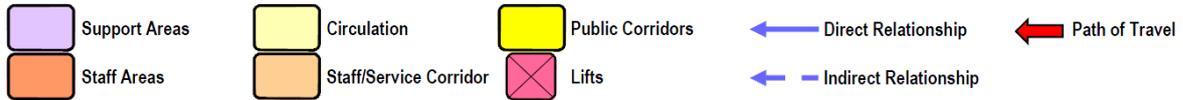
Staff and support areas will generally be shared with other service areas in the hospital.

Key Internal Functional relationships are demonstrated in the diagram below.

1.4.3 Functional Relationship Diagram



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1.5 Design Considerations

Design of Linen Handling areas should ensure that clean and dirty work flows do not cross as far as possible and that holding rooms are free from insects and vermin.

1.5.1 Environmental Considerations

Acoustics

Consideration should be given to acoustic privacy in Offices particularly if located in noisy service areas of the hospital.

Refer to **Part G – Acoustics** of these Guidelines for more information.

Natural Light/ Lighting

Natural light is not required in linen holding rooms, however, artificial lighting is required and should be sufficient to avoid shaded spots where accidents can occur.

1.5.2 Doors

Doors to service corridors and Linen Holding areas must be adequately sized to accommodate the trolleys in use.

Also refer to **Part C – Access, Mobility, OH&S** of these Guidelines.

1.5.3 Ergonomics/ OH&S

Consideration should be given to the manual handling of linen supply and collection trolleys. Where linen sorting, counting or examining activities are undertaken, benches and shelving should be provided at suitable working heights.

Refer to **Part C – Access, Mobility, OH&S** of these Guidelines for more information.

1.5.4 Size of the Unit

The size of the Linen Handling areas will be dependent on the size of the facility and the amount of storage required for standard conditions. The Unit size should include an allowance for reserve clean linen and dirty holding in emergencies and take into consideration the frequency and reliability of linen supply and collection services.

Schedules of Accommodation have been provided for typical Linen Handling Units with an out-sourced linen supply in a range of hospital role delineation levels.

1.5.5 Safety & Security

Safety and Security provisions in the Linen Handling Unit will include:

- Locked linen holding rooms with access restricted to authorised staff
- Security for staff in isolated service zones of the facility, particularly if working after-hours
- Non-slip floor finishes to laundry rooms and trolley washing areas

1.5.6 Finishes

Internal finishes including floor, walls, joinery, and ceilings should be suitable for the function of the unit.

The following factors shall be considered:

- Aesthetic appearance
- Acoustic properties
- Durability
- Fire safety
- Ease of cleaning and compliant with infection control standards
- Suitable floor finishes with respect to slip resistance, frequent movement of bulky linen supply and collection trolleys and impermeable to fluids in wet areas

Door and wall protection should be provided where linen trolley movement occurs such as service corridors, service lifts, trolley parking areas, linen holding rooms and linen storage bays.

Refer to **Part C - Access, Mobility, OH&S** of these Guidelines and Standard Components for more information on wall protection, floor finishes and ceiling finishes.

1.5.7 Fittings, Fixtures & Equipment

Shelving installed in clean linen areas should be constructed of non-porous materials, dust resistant, easily cleaned and avoid inaccessible corners.

Washing and drying machines installed in the laundry room should be commercial quality and installed to manufacturer's specifications.

1.5.8 Building Service Requirements

This section identifies unit specific services briefing requirements only and must be read in conjunction with **Part E - Engineering Services** for the detailed parameters and standards applicable.

Information and Communication Technology

The Linen Handling Unit requires reliable and effective IT / Communications service for efficient operation of the service. The IT design should address:

- Voice/ data cabling and outlets for phones, fax and computers
- Network data requirements and wireless network requirements in receiving areas, which may include service corridors and Loading Docks.
- Scanning systems for registering received supplies or despatches

Heating, Ventilation and Air conditioning

Linen Handling areas such as inspection and folding areas will require air-conditioning with efficient lint filtration systems.

Offices and Staff Rooms should be provided with air-conditioning with temperature and humidity control for staff comfort.

Refer to **Part E - Engineering Services** in these guidelines and to the Standard Components, RDS and RLS for further information.

1.5.9 Infection Control

Hand Basins

Linen Handling staff will require ready access to staff handwashing basins. Hand basins shall be located within the Clean Linen Holding Rooms, in Soiled Linen collection rooms, in linen inspection, mending and folding areas.

Hand basins should comply with **Standard Components for Bay - Handwashing** and **Part D - Infection Prevention and Control**. Refer to the **Standard Components, RDS and RLS** of these guidelines for additional information.

Antiseptic Hand Rubs

It is recommended that in addition to hand basins, medicated hand gel dispensers be located strategically in staff circulation corridors.

The placement of antiseptic hand rubs should be consistent and reliable throughout facilities. Antiseptic hand rubs are to comply with **Part D - Infection Prevention and Control**, in these guidelines.

Antiseptic Hand Rubs, although very useful and welcome, cannot fully replace Hand Wash Bays, both are required.

For further information related to Infection Control refer to **Part D – Infection Control** in these Guidelines.

1.6 Standard Components of the Unit

Standard Components are typical rooms within a health facility, each represented by a Room Data Sheet (RDS) and a Room Layout Sheet (RLS).

The Room Data Sheets are written descriptions representing the minimum briefing requirements of each room type, described under various categories:

- Room Primary Information; includes Briefed Area, Occupancy, Room Description and relationships, and special room requirements)
- Building Fabric and Finishes; identifies the fabric and finish required for the room ceiling, floor, walls, doors, and glazing requirements
- Furniture and Fittings; lists all the fittings and furniture typically located in the room; Furniture and Fittings are identified with a group number indicating who is responsible for providing the item according to a widely accepted description as follows:

Group	Description
1	Provided and installed by the builder
2	Provided by the Client and installed by the builder
3	Provided and installed by the Client

- Fixtures and Equipment; includes all the serviced equipment typically located in the room along with the services required such as power, data and hydraulics; Fixtures and Equipment are also identified with a group number as above indicating who is responsible for provision
- Building Services; indicates the requirement for communications, power, Heating, Ventilation and Air conditioning (HVAC), medical gases, nurse/ emergency call and lighting along with quantities and types where appropriate. Provision of all services items listed is mandatory

The Room Layout Sheets (RLS's) are indicative plan layouts and elevations illustrating an example of good design. The RLS indicated are deemed to satisfy these Guidelines. Alternative layouts and innovative planning shall be deemed to comply with these Guidelines provided that the following criteria are met:

- Compliance with the text of these Guidelines
- Minimum floor areas as shown in the schedule of accommodation

- Clearances and accessibility around various objects shown or implied
- Inclusion of all mandatory items identified in the RDS

The Linen Handling Unit contains Standard Components to comply with details in the Standard Components described in these Guidelines. Refer to Standard Components Room Data Sheets and Room Layout Sheets.

1.6.1 Non-Standard Rooms

Non-standard rooms are rooms are those which have not yet been standardised within these guidelines. As such there are very few Non-standard rooms. These are identified in the Schedules of Accommodation as NS and are separately covered below.

Linen Inspection Room

The Linen Inspection Room, if provided on-site should be located adjacent to the Clean Linen Handling area. This may also be collocated with the Clean Linen Handling area. Clean linen is examined on benches or tables, large enough to lay linen flat. Benches may include lighting to the bench surface and a high level of overhead lighting to aid identification of tears and holes in linen.

Room requirements may include:

- Storage for linen awaiting examination
- Tables for folding
- Sorting area for linen awaiting repair or to be discarded
- Racks for hanging linen items
- Access to hand washing facilities/ hand gel with personal protective equipment such as gloves

Sewing/ Mending Room

The Sewing/ Mending Room may undertake repairs or sewing to a variety of linen that may include drapes, sheets, uniforms, curtains, table and banquet linen. The Sewing/ Mending Room, if provided on-site may be collocated with the Linen Inspection Room or adjacent. The room size will be dependent on the number of sewing stations required; each sewing station should be a minimum of 6m² with additional space for storage and circulation.

The room will require:

- Sewing station/s with industrial sewing machine/s and ergonomic chair
- Tables or trolleys to hold linen for repair and linen repaired ready for despatch to its destination
- Storage for supplies such as threads, needles, repair fabrics and other haberdashery requirements depending on the scope of repairs to be undertaken
- Ironing facilities
- High level of task lighting

Uniform Holding

Uniform Holding will require a locked room for holding of new and spare uniforms for a range of hospital personnel. The room may include changing cubicles with mirrors for staff to try on uniforms to check sizing. The Uniform Holding room may be located in the service area in close proximity to Clean Linen Holding, or remote from the Linen Handling Unit in an area conveniently accessed by staff. The size of the room will be dependent on the amount of uniforms to be held.

Other room requirements may include:

- Shelving for storage of folded items

- Hanging racks for uniform
- Small workstation with computer and telephone for administrative functions associated with uniform distribution

Trolley Washing

Trolley Washing is an area for manual washing of trolleys including linen handling and may be shared with a number of service units. The Trolley Wash area should be located in the service area.

The trolley washing area will require:

- Smooth, waterproof and easily cleanable surfaces to walls and ceiling
- Non-slip, waterproof finishes to the floor
- Hot and cold water outlets with hoses
- Drainage to the floor
- An area for hand drying of trolleys and space for holding completed trolleys awaiting transport to clean holding areas

Staff Registration Bay

A recessed area may be required for staff to register presence and check or record rosters, depending on the system used for staff registration. The bay size will be dependent on the system used and operational policy; 4m² is recommended if accommodating a computer station. An electronic system or scanning device may be used for staff registration.

The Staff Registration Bay should be centrally located in a discreet area with ready access to staff entry area and circulation corridor/s. It may also be located close to the Unit Manager's Office.

The Staff Registration Bay may include the following:

- Staff registration equipment, manual or electronic
- Bench at standing height (optional)
- Pin board for display of rosters or other staff information (or computer for computerised rosters)
- Computer terminal (optional)
- Power and data outlets for computer or electronic staff presence equipment as required

1.7 Schedule of Accommodation

The Schedule of Accommodation (SOA) provided below represents generic requirements for this Unit. It identifies the rooms required along with the room quantities and the recommended room areas. The sum of the room areas is shown as the Sub Total as the Net Area. The Total area is the Sub Total plus the circulation percentage. The circulation percentage represents the minimum recommended target area for corridors within the Unit in an efficient and appropriate design.

Within the SOA, room sizes are indicated for typical units and are organised into the functional zones. Not all rooms identified are mandatory therefore, optional rooms are indicated in the Remarks. These guidelines do not dictate the size of the facilities, therefore, the SOA provided represents a limited sample based on assumed unit sizes. The actual size of the facilities is determined by Service Planning or Feasibility Studies. Quantities of rooms need to be proportionally adjusted to suit the desired unit size and service needs.

The Schedule of Accommodation are developed for particular levels of services known as Role Delineation Level (RDL) and numbered from 1 to 6. Refer to the full **Role Delineation Framework (Part A - Appendix 6)** in these guidelines for a full description of RDL's.

The table below shows alternative SOA's for role delineations from RDL 2 to 6 of varying sizes.

Any proposed deviations from the mandatory requirements, justified by innovative and alternative operational models may be proposed and record in the **Non-Compliance Report** (refer to **Part A - Appendix 4**) with any departure from the Guidelines for consideration by the DOH for approval.

1.7.1 Linen Handling Unit

ROOM/ SPACE	Standard Component Room Codes	RDL 2 Qty x m ²	RDL 3 Qty x m ²	RDL 4 Qty x m ²	RDL 5 Qty x m ²	RDL 6 Qty x m ²	Remarks
Service Areas							
Linen Holding - Clean	lho-cl-d similar	1 x 15	1 x 30	1 x 45	1 x 65	1 x 85	Adjust size to meet service plan
Linen Holding - Soiled	lho-so-d similar	1 x 15	1 x 20	1 x 30	1 x 40	1 x 50	Adjust size to meet service plan
Linen Inspection Room	NS			1 x 10	1 x 15	1 x 20	Optional
Sewing/ Mending Room	NS			1 x 10	1 x 15	1 x 15	Optional
Uniform Holding	NS			1 x 15	1 x 20	1 x 20	Optional
Laundry - Hospital (Small Items)	laun-ho-d similar	1 x 6	1 x 6	1 x 10	1 x 20	1 x 20	Optional
Support Areas							
Loading Dock	lodk-d similar	1 x *	1 x *	1 x *	1 x *	1 x *	*External Area, Shared between service units
Trolley Washing Area	NS	1 x 6	1 x 6	1 x 6	1 x 10	1 x 10	Optional, may be shared

ROOM/ SPACE	Standard Component Room Codes	RDL 2 Qty x m ²	RDL 3 Qty x m ²	RDL 4 Qty x m ²	RDL 5 Qty x m ²	RDL 6 Qty x m ²	Remarks
Bay - Equipment Park	beqp-12-d similar		1 x 12	1 x 12	1 x 20	1 x 20	Holding clean spare trolleys
Staff Areas							
Office - Single Person	off-s9-d			1 x 9	1 x 9	1 x 9	For Manager. May also be shared with the housekeeping unit
Office - Shared	off-2p-d				1 x 12	1 x 12	For Supervisors. May also be shared with the housekeeping unit
Staff Registration Bay	NS	1 x 4	1 x 4	1 x 4	1 x 4	1 x 4	Optional
Meeting Room	meet-l-15-d	Shared	Shared	Shared	Shared	Shared	Optional, Shared with general staff facilities
Staff Room	SRM-15-D	Shared	Shared	Shared	Shared	Shared	Optional, May be shared
Change - Staff (M/F)	CHST-12-D	Shared	Shared	Shared	Shared	Shared	Shared, Toilets, Showers, Lockers
Toilet - Staff (M/F)	WCST-D	Shared	Shared	Shared	Shared	Shared	Shared with general staff facilities
Sub Total		46	78	151	230	265	
Circulation %		10	10	10	10	10	
Area Total		50.6	85.8	166.1	253	291.5	

Please note the following:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the Standard Components
- Rooms indicated in the schedule reflect the typical arrangement according to RDL
- All the areas shown in the SOA follow the No-Gap system described elsewhere in these Guidelines
- Exact requirements for room quantities and sizes shall reflect Key Planning Units (KPU) identified in the Clinical Service Plan and the Operational Policies of the Unit
- Room sizes indicated should be viewed as a minimum requirement; variations are acceptable to reflect the needs of individual Unit
- Office areas are to be provided according to the Unit role delineation and number of endorsed full time positions in the unit

Further Reading

In addition to Sections referenced in this FPU, i.e. **Part C- Access, Mobility, OH&S, Part D - Infection Prevention and Control**, and **Part E - Engineering Services, Part G-Acoustics** readers may find the following helpful

- Health Building Note 00-04 Circulation and communication spaces, Department of Health (UK), 2013 refer to https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/187026/Health_Building_Note_00-04_-_Circulation_and_communication_spaces_-_updated_April_2013.pdf
- International Health Facility Guideline (IHFG) www.healthdesign.com.au/ihfg
- Ministry of Health UAE, Unified Healthcare Professional Qualification Requirements, 2017, refer to website: <https://www.haad.ae/haad/tabid/927/Default.aspx>
- The Facility Guidelines Institute (US), Guidelines for Design and Construction of Hospitals, 2018. Refer to website: www.fgiguilines.org
- The Facility Guidelines Institute (US), Guidelines for Design and Construction of Outpatient Facilities, 2018. Refer to website: www.fgiguilines.org